PRIVILEGED AND CONFIDENTIAL

ADDITIONAL ENVIRONMENTAL INVESTIGATION
ROTH BROS. SMELTING CORP. - PLANT 2
EAST SYRACUSE, NEW YORK

SECTION 2 OF 2

by

H&A of New York
Rochester, New York

for

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Rochester, New York

File No. 70185-42

May 1991

EXECUTIVE SUMMARY

This section of the report presents the results of the additional environmental investigation at the Roth Bros. Smelting Corp. - Plant 2 site in East Syracuse, New York. The intent of the investigation was to continue investigation of Plant 2 and further evaluate several site areas for potential presence and extent of hazardous materials previously identified in H&A's initial environmental investigation, as summarized in Section 1.

H&A's initial investigation identified several Plant 2 areas for additional study. The additional environmental investigation objectives in each area were to evaluate the presence of selected oil and/or hazardous substances associated with the area; apparent extent of the substances; and potential remedial alternatives for areas found to contain the substances. Specific areas of investigation included: 1) an equipment maintenance area and associated underground tanks for petroleum product release; 2) an area of fill (paved and unpaved) north of Plant 2 which showed elevated lead and PCB levels in selected areas in the initial investigation; 3) a baghouse/hazardous waste storage area, again where previous sampling showed elevated lead and PCB concentrations; and 4) associated drainageways associated with the fill and baghouse areas.

This additional investigation included the installation of 93 shallow test borings, 12 observation wells, and 2 test pit trenches. Fifty-eight soil samples were collected and analyzed for total lead, TCLP lead and PCBs. Ten soil samples were collected and analyzed for total organic carbon and cation exchange capacity. In addition, 17 samples (soil, baghouse dust and emission particulate) were collected and submitted to the University of Rochester for lead isotopic analyses to assist in evaluation of lead sources. Groundwater from each of the observation wells was collected and analyzed for aluminum, calcium, iron, potassium and lead (both total and dissolved metals) and PCBs. Two groundwater samples were also analyzed for total petroleum hydrocarbons from the maintenance shop tank area.

Results of analyses performed on samples collected during the additional investigation indicate the following:

Maintenance Shop Area

- Four soil borings, two of which were converted to groundwater monitoring wells, did not indicate the significant presence of petroleum related compounds. Total petroleum hydrocarbon (TPH) analyses were performed on

groundwater samples from the wells and 4.52 ppm TPH was detected in one well. It is H&A's opinion this concentration is not indicative of free petroleum or significant dissolved petroleum in the samples.

Some petroleum staining in soil was evident in our initial investigation in this area. Under current NYSDEC policy, if such soils require excavation and removal from the site (such as for foundation construction), special handling or disposal requirements may apply. If such work is undertaken in the future in this area H&A recommends Roth Bros. check on applicable criteria for petroleum residues in soils.

Fill and Baghouse Areas

- Total lead concentrations detected in soil samples were above the comparison criteria (based on a review of USEPA Records of Decisions and NYSDEC's responses for remediation at other sites) of 500 ppm at several locations in the Fill and Baghouse areas. These areas may require remedial action.

- TCLP lead concentrations were detected in soil samples at concentrations above the 5.0 ppm EPA regulatory limit in several soil sample locations in the Fill and Baghouse areas. These samples are, therefore, characteristically hazardous by this method and may require remedial action.

- PCBs were detected in several samples in the Fill and Baghouse areas above the EPA PCB Spill Cleanup Guidance Concentration 25 ppm and may require remedial action.

Samples with high lead concentrations also frequently exceeded the TCLP regulatory limit. Several of the samples with high PCB concentrations also had high lead concentrations.

Groundwater

Twelve wells were installed across the site to determine groundwater flow direction and to collect samples at both upgradient and downgradient locations.

Evaluation of groundwater for potential presence of smelter related compounds derived from the fill and baghouse areas was performed by sampling for possible smelter-specific compounds (lead, PCBs) as well as indicator parameters to evaluate effects of sediment in samples (iron, calcium, aluminium, potassium and leachability (pH).

Lead was detected in one groundwater sample (filtered for soluble lead) at 0.117 ppm during an initial sampling round. The lead presence may have been due to turbidity in the groundwater, therefore the well was redeveloped to reduce the turbidity. A second sampling event, following redevelopment of the well, indicated a concentration of 0.0142 ppm dissolved lead, below the NYS Class GA (protected for drinking water source) groundwater quality criteria of 0.025 ppm.

Iron (dissolved) was detected in groundwater in B278-OW, B279-OW and B290-OW at concentrations above the NYS water quality criteria of 0.300 ppm. The criteria is an aesthetic-based, not health-based, criteria. Concentrations of 1 to 5 ppm dissolved iron in groundwater are common, indicating the concentrations detected on site fall within the common range, with one exception. B279-OW, in the fill area, had a concentration of 8.75 ppm iron. The high iron may be due in part, to natural conditions in the groundwater.

In summary, it does not appear the groundwater has been adversely impacted by the presence of fill at the site. Additionally, based on the apparent groundwater flow direction and the results of groundwater analyses, it is unlikely there would be off-site migration of metals in groundwater.

Remedial Action

Based on site observations and sampling, it appears several areas of soil/fill material and sediments in the Fill and Baghouse areas (an estimated total of 19,500 tons) may require remedial action for the presence of lead (TCLP and total) and PCBs. Based on the observed groundwater flow direction and analyses of groundwater collected downgradient from the affected soils, it does not appear the groundwater will require remedial action.

Based on H&A's evaluation, immediate remedial action on site is not necessary for the following reasons. The lead/PCBs are not migrating to groundwater despite being in place for up to 12+ years (based on former storage in the area from 1976 to 1979). The lead/PCBs concentrations which exceed regulatory criteria in soil/fill appear to be confined to that medium. There is no evidence that lead/PCB concentrations have migrated offsite. It is likely that the fill and immediately underlying soils would exhibit low hydraulic conductivity. Public access to the affected area is restriced, and plant use is limited to occassional plant personnel visits to take hardware in and out of storage. Therefore, no significant threat to site or public health exists.

H&A of New York was requested to evaluate remedial alternatives and therefore reviewed six remedial action alternatives including no action, in-situ solidification, silicate stabilization, capping in-place, off-site landfill disposal, and in-situ vitrification. The alternatives were reviewed for applicability to the site, potential effectiveness, performance and cost. Based on an initial review of the six remedial alternatives, if remediation is to be performed H&A recommends the capping-in-place alternative.

This alternative is considered reliable technology and will effectively reduce infiltration into and flow-through of water in the fill materials, thereby significantly reducing the likelihood of migration of the compounds of concern. Capping reduces the potential for exposure by migration and contact routes. Additionally, the capping-in-place alternative is the most cost effective measure for remediation.

Based on surface and sediment sampling in the paved baghouse/scrap storage area, it appears lead dusts from current operations are present on pavement surface areas as well as in the surface-water drainage system along the western property boundary. H&A recommends housekeeping practices be reviewed and revised to prevent future deposition of baghouse dusts in these areas. The surface of the paved areas should be cleaned, and wastes generated from the cleaning be handled/disposed appropriately. Sediments within the storm sewer pipe should be flushed out, collected and properly disposed. It may be possible to incorporate sediments from this cleaning in the stabilization/capping remediation of the fill & baghouse areas as described above. H&A recommends confirmation sampling of the paved area and the drainage pipe be conducted following the clean-up actions.

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I. INTRODUCTION

This document is a report on the performance and results of an additional site investigation of the Roth Bros. Smelting Corporation (Roth Bros.) Plant 2 in East Syracuse, New York. The investigation was performed to assist Nixon, Hargrave, Devans & Doyle (NHDD) and Roth Bros. in evaluating the potential presence of oil and hazardous materials on-site. H&A of New York previously conducted an initial investigation (contained in Section 1). The results of the initial investigation identified several areas of concern as requiring further investigation on the Plant 2 property.

The purpose of the additional environmental investigation was to determine the potential presence of oil and hazardous materials and their apparent areal extent. Potential remedial alternatives for the affected areas were then reviewed in light of the compounds detected. Four general areas of study were identified including 1) an equipment maintenance/underground petroleum tank storage area for potential presence of petroleum products in soil and groundwater; 2) an area of fill (paved/unpaved) north of Plant 2 which showed high concentrations of lead and PCBs in soil in the previous investigation; 3) a smelter dust baghouse/hazardous waste storage area, again for potential presence of lead and PCBs; and 4) drainageways associated with the fill and baghouse areas.

This document briefly summarizes relevant existing information from the initial investigation regarding the potential presence of oil and hazardous materials on the Plant 2 site. The report outlines the additional work scope items and quality assurance procedures utilized to evaluate and characterize the nature and extent of compounds in soil, groundwater and sediment at the site potentially associated with smelting activities. The additional environmental investigation consisted of a limited subsurface investigation including test borings; test pit explorations; groundwater observation well installations; limited sampling and laboratory analyses of soil, fill and groundwater; and a limited evaluation of potential remedial activities. These activities are described in greater detail in the following report sections.

II. SITE LOCATION AND CURRENT CONDITIONS

The site location, current conditions and site operations are described in H&A's initial environmental investigation report, contained in Section 1.

III. PREVIOUS INVESTIGATIONS

H&A of New York conducted an initial environmental investigation for NHDD. This initial investigation was intended to evaluate several potential source areas of oil and hazardous materials at Roth Bros. Plant 2. The results may be found in Section 1 of this report.

Summary - In summary, two occurrences of oil and hazardous materials were identified during the initial investigation. Oil stained soils were observed in the maintenance area, but appeared to constitute a solid waste. Since the soils do not currently require excavation for construction or other projects, leaving them in place would be consistent with current NYSDEC policy. However, presence of free product petroleum on groundwater would require remediation and therefore recommendations were made to evaluate this condition, as described above.

Fill and sediment which appeared to be characteristically hazardous by TCLP lead criteria and/or the presence of PCBs above 25 ppm is present in two areas of the plant, the fill area north of Plant 2 and the Baghouse/Outfall 001/Dross area (hereinafter Baghouse area). In order to evaluate the need to remediate or remove the materials from the site, additional study was determined to be required to better determine the source(s), apparent extent and whether groundwater had been affected.

IV. SUBSURFACE INVESTIGATIONS

The purpose of the additional study has been to continue the assessment of the Plant 2 site in accordance with the recommendations outlined during the initial investigation. The subsurface exploration program developed for this investigation consisted of test borings, test pits and observation well installations.

Explorations were conducted between 24 October and 6 November 1990 and 22 January 1991 by Parratt-Wolff, Inc. of Syracuse, New York, under the observation of H&A of New York personnel. Exploration locations are shown on Figure 2; test boring reports and test pit reports are presented in Appendices A and B, respectively.

Brief discussions of the subsurface explorations conducted and the fill conditions encountered for each area explored are presented below. Native materials encountered below the fill were generally composed of lacustrine sand and silt overlying glacial till. In some instances, there was an absence of lacustrine materials.

Groundwater conditions were evaluated with the installation of 12 observation wells across the site including both upgradient and downgradient locations. The wells were surveyed and groundwater flow direction determined. Wells were sampled, and groundwater submitted for analyses (see Section 4-06).

4-01. MAINTENANCE AREA

A total of four (4) test borings, designated B287 through B290 were drilled in the maintenance area on the east side of the Plant 2 buildings. This area was previously noted to have elevated concentrations of oil and grease in the soils. Fill was encountered to depths ranging from 1.5 to 3.5 ft. and typically consisted of sandy gravel. Black staining in the fill and black stained cinders were noted in two of the four borings (B288 and B289).

4-02. PAVED FILL AREA

A total of 53 shallow test borings, designated B201 through B252 and B277, were drilled in the paved fill area at the north end of Plant 2. This area was observed in aerial photographs to possibly have received fill in the past. A grid pattern of boring locations was established in accordance with USEPA guidance for screening of unknown fill areas. The borings were laid out in an approximate 50 ft. x 50 ft. grid pattern in order to maximize coverage of the area. Borings were drilled to depths ranging from 2.5 to 8.0 ft. depending on encountered fill depth. Boring locations are shown on Figure 2.

Fill was encountered to depths ranging from 0 to 6.5 ft. (Table I). In two instances (B234 and B242), the bottom of the exploration was at 5.0 ft. and the base of the fill had not yet been encountered. Fill thicknesses in nearby test borings ranged from 0.5 to 7.8 ft. The average fill thickness encountered in the paved fill area was 3.1 ft. The ground surface typically consisted of a concrete and/or blacktop surface with gravel sub-base. Below the paved surface, fill was variable in composition, including silt, sand and gravel, cinders, wood fragments, glass and ash.

4-03. UNPAVED FILL AREA

A total of three (3) test borings and two (2) test pit trenches were excavated in the unpaved fill area north of Plant 2 (Figure 2). (This is in addition to 18 test pits conducted in this area in the initial investigation). The additional explorations were conducted to further evaluate the fill with high TCLP lead and PCBs encountered in the initial investigations by H&A. The test pit trenches were designated TP201 and TP202 (Appendix B); the borings, designated B278, B279 and B292, were converted to observation wells (Appendices A and C).

TP201 and TP202 were 35 and 20 ft. in length, respectively. They were excavated in a north-south direction in an effort to locate a former ditch that crossed this area observed in aerial photographs. In TP201 a dark brown organic silt at 2.5 ft. depth was observed near the southern end of the trench. This material may represent sediment from the base of the former ditch prior to fill activity.

Fill was encountered to depths ranging from 2.0 to 3.0 ft. The fill material typically consisted of sandy silt, with gravel, wood and metal fragments, ash and brick pieces. Native materials underlying the fill consisted of lacustrine silts and sands.

4-04. BAGHOUSE/SCRAP STORAGE AREA

A total of 24 shallow test borings, designated B253 through B276, were drilled in the paved area used for scrap storage and hazardous waste storage, east and northeast of Plant 2 buildings (Figure 2). This area was also observed in site photographs to be disturbed and may have received some fill. A 50 ft. x 50 ft. grid pattern was established for the boring locations. Due to physical obstructions, the grid was altered slightly toward the southern end of the grid.

Fill was encountered to depths ranging from 0 to 7.8 ft. Fill was not encountered beneath the pavement in six (6) of the test borings. The average fill thickness encountered was 2.1 feet. Concrete pad or blacktop surface with a gravel sub-base was typically encountered at the ground surface. Below the paved surface, fill typically consisted of a sandy silt with gravel.

4-05. NATIVE SOILS

Three (3) test borings were placed in native soils at the north end of the unpaved fill area. The borings, designated B280, B291 and B293, were converted to groundwater monitoring wells to evaluate water quality north of the fill area.

4-06. WELL INSTALLATION

4.6.1 Well Installation

Wells were installed in the boreholes of test borings B273, B277, B278, B279, B280, B281, B286, B287, and B290 through B293. Wells are designated by the test boring number plus the suffix -OW. Well installation reports and the accompanying groundwater level monitoring report are contained in Appendix C.

In order to construct each well a 2.0 inch diameter Schedule 40 PVC screen (slotted 0.010 in.) and riser pipe were installed in the borehole. Quartz sand was placed in the annular space between the pipe and the side of the borehole to a distance of 0.2 to 2.5 ft. above the top of the well screen.

A bentonite pellet seal was placed above the sand pack and cement grout was placed in the well annulus throughout the remaining distance to the ground surface. For wells with a flush mounted casing, a quartz sand layer was placed between the top of the bentonite seal and the base of the concrete surface seal to aid in dispersing surface runoff that may collect in the protective casing.

A locking steel protective casing was placed over the completed well, except for flush-mounted wells which were equipped with a locking cap on the PVC riser.

4.6.2 Well Development

Wells were developed by Parratt Wolff Drilling for a minimum of one hour or until measurements on a portable nephelometric turbidity meter were 50 Nephelometric Turbidity Units (NTUs) or less for groundwater. Wells B278-OW and B279-OW were re-developed on 24 January 1991. These wells were resampled in January along with the sampling of B291-OW, B292-OW and B293-OW.

4.6.3 Groundwater Potentiometric Levels

The groundwater wells installed on site provide data as to the groundwater flow direction through measurements of the groundwater potentiometric levels. Groundwater level measurements were obtained from the twelve wells installed on-site. An electronic depth indicator sounder was used to collect measurements of the groundwater surface in the well to the nearest 0.05 ft. from the top of the PVC or top of the steel protective casing at the well. The date, time and measurements were recorded in a field log and the data transferred to the Groundwater Monitoring Reports (Appendix C).

Nine wells were surveyed by Survey Systems of Syracuse, New York, on 21 November 1990. B291-OW, B292-OW and B293-OW, installed subsequent to the other nine wells, were surveyed by Survey Systems on 7 February 1991. Surveyed elevation results were referenced to the National Geodetic Vertical Datum (NGVD) elevation and reported to an accuracy of 0.01 ft. The groundwater elevations were used to generate the potentiometric surface map presented in Figure 3.

The groundwater flow is generally in a northeasterly direction to apparent discharge points along the surface water drainage channel located at the east boundary of the property, and to the south branch of Ley Creek, north of the site.

Based on observations of water accumulating in test pits, and the fine-grained nature of fill and native soils encountered, it is likely that the fill and immediately underlying soils would exhibit low hydraulic conductivity.

Results of the groundwater analyses conducted on site are discussed in Sections 5-05, 5-06, and 5-07.

V. CHEMICAL ANALYSES

5-01. SAMPLE LOCATIONS, COLLECTION AND HANDLING

Sample locations are shown on Figure 2. Summaries of the test boring, test pit and environmental sampling are presented in Tables I and II.

In the two grid areas (the paved fill area and the baghouse/scrap storage area), approximately 63 percent of the borings were randomly pre-selected using random number generation to identify the borings which would be sampled for lab analyses. Random selection by this method is recommended USEPA procedure for screening uncontrolled fill areas, as it prevents bias in the sample selection process (13).

5.1.1 Soil and Sediment Sampling

Samples were collected continuously in each boring. Test borings were advanced using 4-1/4 inc. I.D. hollow stem augers in accordance with ASTM method D1586-84. Samples were described using the Modified United Soil Classification System. Soil samples were collected from the split spoon after drilling to the desired sampling depth. The split spoon was decontaminated between each sample point using an alconox wash, deionized water rinse, methanol wipe and final deionized water rinse.

Sediment samples were collected from three storm sewer manholes along the western property line. Samples were collected by lowering a stainless steel cup mounted on a pole into the sediment. The stainless steel cup was decontaminated between sampling points, as described above.

Surface samples of native soils were collected from two locations within the wooded area north of Plant 2. A shovel was used to excavate below a 4± inch layer of organic topsoil and a stainless steel spoon to collect the soil sample. Both the shovel and the stainless steel spoon were decontaminated between sampling locations, as described above.

Soil samples from test pit trenches were obtained from the sides of the excavation at the desired depth using a stainless steel spoon. The stainless steel spoon was decontaminated between sampling points as described above.

Samples were mixed thoroughly in a stainless steel bowl in order to homogenize sample splits submitted for analyses. The bowl and spoon used for mixing were decontaminated between samples. Soil/sediment samples were analyzed for total lead, TCLP lead and PCBs. Subsets of the samples were also analyzed for Total Organic Carbon and cation exchange capacity to evaluate possible correlation of these factors with high leachable lead levels.

5.1.2 Groundwater Sampling

Sampling of groundwater from the observation wells was conducted on 9 November 1990, and 24 and 25 January 1991 by H&A of New York personnel. Wells were purged using disposable bailers and water levels were recorded prior to purging. A minimum of four well volumes were removed from each of the wells.

Groundwater was sampled for PCBs (by EPA Method 8080) and five metals (aluminum, calcium, iron, potassium and lead), including both field filtered (soluble) and non-filtered (total) samples. Equipment used to filter the samples in the field include a peristaltic pump, disposable 0.45 micron filters, and disposable tubing.

5.1.3 Sampling Handling

A chain-of-custody form was completed following sample collection and copies are included in Appendix D with the laboratory data.

Exterior surfaces of sample jars and bottles were wiped clean with paper towels after sample collection, and glass containers were wrapped in "bubble" wrap to prevent breakage. Samples were shipped to the analytical laboratory under chain-of-custody in coolers containing ice in sealed plastic bags to maintain a $4^{o}C$ sample storage temperature.

5-02. QA/QC PROCEDURES

Quality assurance/quality control (QA/QC) measures were followed for field collection and laboratory analyses of samples obtained at the site.

For soils, two field blind-duplicate samples were collected for the paved fill area and for the baghouse scrap storage area.

Field duplicate sample analytical results are presented in Table III with the site analytical results. Sample duplicates for soils are as follows:

- o paved/fill area - B201 and B210
- o baghouse/scrap storage area - B253 and B263

For groundwater field duplicate samples are as follows:

- o November 1990 sampling event: B277-OW
- o January 1991 sampling event: B279-OW

Field cleaning blanks (rinsate blanks) were collected using the same handling techniques as other samples. Deionized water, supplied by General Testing Corp., was poured over the sampling implement following decontamination. Field blanks are used to assess the potential introduction of contamination during sample collection and analyses.

5-03. LABORATORY CHEMICAL ANALYSES RESULTS

Soil, sediment and groundwater samples, as well as rinsate blanks, were submitted to General Testing Corporation for laboratory analyses. A summary of laboratory analytical results for the 58 soil/fill samples is presented in Table III. The analytical results and chain-of-custody records are presented in Appendix D. Soil/fill samples were analyzed for total lead, TCLP lead and PCBs (by EPA Method 8080). Selected samples were submitted for lead isotopic analyses to evaluate potential lead sources (see Section 5-04). In addition, total organic carbon (TOC) and cation exchange capacity (CEC) analyses were performed on subsets of the soil samples. A discussion of the TOC and CEC results may be found in Section 6-01.

Concentration criteria were selected to allow comparison of detected lead and PCB values at various sample locations. Such criteria were identified as follows:

- o Lead - the USEPA has established a concentration of 5 ppm or greater lead present in leachate from the Toxicity Characteristic Leaching Procedure (TCLP) analysis as the basis for determining characteristically hazardous lead waste (greater than or equal to 5 ppm) from non-hazardous (less than 5 ppm).

- o The EPA has not currently established a total lead standard for soil, however, an action level of 500 ppm has been reported at cleanup sites under review by NYSDEC (14). A 1000 ppm action level has been reported at Superfund sites, in EPA's biogenetic model, in Center for Disease Control

policy and by the State of Minnesota (temporary standard) (4). To be conservative and in line with potential NYSDEC requirements, the 500 ppm concentration was used as a comparison criteria.

- PCBs - the USEPA has established a range of total PCB concentrations, based primarily on land use and potential for human exposure as a basis for comparing PCB data. Concentrations less than 10 ppm total PCB are generally considered acceptable at most locations. A range between 10 and 25 ppm is considered acceptable depending on land use; 10 ppm is the comparison criteria where residential/commercial land use prevails and 25 ppm (or lower) is generally acceptable in industrial areas. Since the site is an industrial site and is surrounded by industrial use, Table III highlights sample values above 25 ppm.

5.3.1 Paved/Fill Area

In the paved area north of the Plant 2 buildings, 15 out of 37 samples had lead (total) concentrations higher than a 500 ppm comparison criteria used for this investigation (Table III). Locations of the materials where these values clustered were observed consisted of three general locations. The total lead concentrations are higher on the west side of the railroad spur near the Plant 2 building; at the north edge of the paved area; and along the east edge of the paved area and property line near the railroad tracks.

The TCLP lead concentrations in the paved area exceed the 5.0 ppm EPA regulatory level in 8 sample locations (Table III). Seven of these were also found to coincide with high lead concentration areas described above. Although the correlation between high lead (total) and high TCLP lead does not hold true for all samples tested, the high TCLP values were found to correspond with high lead areas just west of the railroad spur near the Plant 2 building; at the north edge of the paved area; along the east edge of the paved area; and at the west edge of the paved area.

B239 was sampled at two consecutive depths (1.0-3.0 ft. and 3.0-5.0 ft.). The analyses indicate a higher concentration with increasing depth for both total and TCLP lead. The composition of the material in the deeper sample was observed to contain cinders and wood fragments. Conversely, in borings where native soil was sampled and analyzed (B253, B254) relatively low lead concentrations and non-detect TCLP lead values were found.

Within the paved fill area, PCBs were detected in 35 out of 37 soil/fill samples (Table III). The PCBs detected were primarily Arochlors 1248 and 1254; four samples contained Arochlor 1232; and one sample contained Arochlor 1242. Of the samples analyzed, three had total PCB concentrations in excess of the 25 ppm regulatory criteria. Concentrations of those in exceedance of the criteria range from 31.2 ppm to 82.7 ppm. The higher levels of PCBs were detected primarily along the east side of the paved fill area near the eastern property boundary.

5.3.2 Baghouse/Scrap Storage Area

In the paved scrap storage area and near the hazardous waste storage along the west side of Plant 2, 2 out of 16 samples had concentrations in exceedance of 500 ppm (Table III). Only one sample (B264-S1) had high lead concentration (29,600 ppm) in the aluminum scrap storage yard. A layer of black ash was observed from 1.1 to 1.5 ft. in B264. Sample B274-S1 located near the hazardous waste storage area also had a high lead level (2,980 ppm). Fill in B274 was observed to consist of gravelly coarse to fine sand with wood fragments.

TCLP lead was reported as non-detect in 15 out of 16 samples from the paved area (Table III). B264-S1 had a TCLP lead concentration of 189 ppm. As indicated above, B264 also had a high total lead concentration. The composition of the soil matrix in B264 was observed to contain a layer of black ash from 1.1 to 1.5 ft.

PCBs were detected in 12 out of 18 samples analyzed in the baghouse/scrap storage area (Table III). Concentrations ranged from non-detect to 4.95 ppm, below the comparison criterion of 25 ppm for PCBs in soil. Arochlors 1248 and 1254 were detected in the samples.

5.3.3 LBS-3 Area

Four borings (B282 through B285) were drilled and sampled in the vicinity of the LBS-3 sample location, adjacent to the lead baghouses on the west side of the fenceline (Figure 2). High lead (total) and TCLP lead were found in the four samples collected and analyzed. Total lead concentrations range from 1530 to 23,740 ppm (Table III). TCLP lead concentrations range from 12.2 to 22.7 ppm. Samples from this area were observed to consist of a sandy silt with little to trace gravel and trace organic material.

VIII. CONCLUSIONS AND RECOMMENDATIONS

Based on the scope of work performed for this investigation, the following conclusions and recommendations with respect to potential occurrence of oil and hazardous materials at this site have been made.

Paved and Unpaved Fill Area: Two primary areas were identified on site with high total lead (>500 ppm) and/or high TCLP lead (>5.0 ppm) concentrations in the soil/fill materials and in sediments in the outfall ditches 001 and 002. PCBs were also detected in one of these areas. In addition, spotty occurrences of high total and/or TCLP lead exist around the fill area northwest of Plant 2. An estimate of the soil/fill and sediment contained in these areas indicates 19,500 tons of material may be affected. Based on the investigation conducted to date, the lead and PCBs have not migrated to groundwater or off site; site access is restricted; and the lead and PCBs appear to be primarily contained within the soil/fill material. Further, it is likely that the fill and immediately underlying soils would exhibit low hydraulic conductivity. Therefore, there is not an immediate need for remedial action at the site. At your request, H&A conducted a preliminary review of six potential remedial alternatives to address the lead and PCBs if and when Roth elects to undertake remedial action. The alternatives reviewed include the no-action alternative, silicate stabilization, in-situ solidification, capping in-place, removal and off-site disposal and in-situ vitrification. Based on a review of the six remedial alternatives, H&A recommends the capping-in-place, at such time as Roth Bros. elects to proceed with a remedial action. This alternative is considered reliable technology and will effectively seal off the contamination, thereby minimizing the likelihood of migration of the compounds of concern. Through isolation, the toxicity of the affected soils is reduced. Additionally, the capping-in-place alternative is the most cost effective measure for remediation.

Baghouse/Scrap Storage Area: Based upon a review of surface sampling and sediment sampling on the Plant 2 property, it appears lead dusts from current operations are present on the paved surface area as well as in the surface water drainage system located along the western property boundary. H&A recommends the current housekeeping practices, including storage/handling baghouse dusts, be reviewed and revised to prevent accumulation and runoff of dusts and debris from these areas. In addition, the paved areas should be cleaned and waste material derived from the cleaning be handled accordingly. Sediments which have collected in the underground drainage pipe along the western boundary should also be flushed out, collected and properly disposed. H&A recommends confirmation sampling of

the paved area and the drainage pipe be conducted following the cleanup actions. It may be possible to incorporate the treatment of the sediments collected during cleaning of this area into remediation of the soil/fill.

Maintenance Area: Two observation wells were installed in the maintenance area to evaluate groundwater for the potential presence of free and dissolved petroleum hydrocarbons.

Petroleum hydrocarbons were detected in one of the wells at 4.52 ppm by the infrared method, however, they were not detected above the laboratory detection method by the gas chromatograph method. No free product petroleum was observed. Based on the single low concentration detected and the observations made, it does not appear the petroleum hydrocarbons are significantly affecting groundwater at the location sampled. No further investigation or action is recommended.

H&A's prior investigation had noted petroleum straining as present in some soils exposed in test pits in the maintenance area. It is H&A's understanding that unless such soils need to be excavated and handled for site construction or other purposes, they may remain in place under current NYSDEC policy. If however they are excavated they may need to be handled as a special solid waste. We recommend Roth be cognizant of this in planning work/construction in the Maintenance Area.

Regarding groundwater conditions, twelve groundwater observation wells were installed across the site, and groundwater samples collected and analyzed. Based on the observed groundwater flow direction and analyses of groundwater collected downgradient from the affected soil/fill areas, it does not appear the groundwater will require remedial action. Based on the groundwater flow direction and results of analyses conducted for on-site groundwater, it appears unlikely there would be offsite migration of metals in the groundwater.

IX. CLOSING

9-01. LIMITATIONS

The conclusions provided by H&A of New York are based solely on the work conducted and sources of information referenced in this report. Any additional information that becomes available concerning this site should be provided to H&A of New York so that our conclusions may be revised and modified as necessary.

The work performed by H&A of New York is subject to the terms and conditions of our Agreement with NHDD. Finally, this work has been undertaken in accordance with generally accepted consulting practices, including the specific USEPA guidelines and ASTM methods referenced in this report. No other warranty, express or implied, is made.

9-02. CONSULTANT'S STATEMENT

I state that I have personally examined and am familiar with the information submitted in Sections 1 and 2 of this Final Report. Based upon my own knowledge and upon my inquiry of those individuals responsible for obtaining the information presented, the foregoing information is true, accurate and complete based upon the scope of work performed, as described in the Agreement between H&A of New York and NHDD. I am aware that this information is being requested for the purpose of determining compliance with local, state or federal laws and may be submitted to appropriate governmental regulatory agencies for those purposes. I am aware that there are significant penalties for submitting false information to such agencies, including the possibility of fine and imprisonment.

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TABLE I
ROTH BROS. SMELTING CORP.
SUMMARY OF SAMPLE COLLECTION
(Page 1 of 2)

LOCATION	EXPLORATION NUMBER	FILL DEPTH (FT.)	SOIL SAMPLE	DUPLICATE	METALS, PCBs ANALYSES	LEAD ISOTOPE	TOTAL ORG. CARBON	CATION EXCH CAPACITY
PAVED FILL AREA	B201	0–3.0	X	X	X			
	B202	0–3.4	X		X			
	B203	0–3.2						
	B204	0–3.3						
	B205	0–4.1	X		X			
	B206	0–3.1	X		X			
	B207	0–3.0						
	B208	NE						
	B209	0–3.5	X		X			
	B210	0–3.0	X	X	X			
	B211	0–2.0						
	B212	0–3.1	X		X			
	B213	0–2.5	X		X			
	B214	0–2.8	X		X			
	B215	0–2.8	X		X	X	X	X
	B216	0–3.0	X		X			
	B217	0–2.5	X		X	X	X	X
	B218	0–3.5	X		X			
	B219	0–2.0	X		X			
	B220	0–2.7	X		X	X		
	B221	0–2.3	X		X			
	B222	0–2.1						
	B223	0–2.7	X		X			
	B224	0–3.0						
	B225	0–3.0	X		X			
	B226	0–2.5	X		X			
	B227	NE						
	B228	0–1.2	X		X	X	X	X
	B229	0–3.5	X		X			
	B230	0–3.0						
	B231	0–3.3	X		X			
	B232	0–2.6						
	B233	0–2.7	X		X			
	B234	0–5.0**	X		X			
	B235	0–4.4						
	B236	0–2.4						
	B237	0–4.8	X		X			
	B238	0–3.2	X		X			
	B239	0–5.1	X		X			
	B240	NE						
	B241	0–6.0	X		X			
	B242	0–5.0**						
	B243	0–5.2	X		X			
	B244	0–6.0						
	B245	0–3.5	X		X			
	B246	0–4.3	X		X			
	B247	0–3.5	X		X			
	B248	0–2.0						
	B249	0–2.0						
	B250	0–2.5	X		X			
	B251	0–3.0	X		X			
	B252	0–6.5	X		X			
	B277-OW	0–0.5						

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H & A OF NEW YORK
ROCHESTER, NEW YORK

TABLE I
ROTH BROS. SMELTING CORP.
SUMMARY OF SAMPLE COLLECTION
(Page 2 of 2)

LOCATION	BORING NUMBER	FILL DEPTH (FT.)	SOIL SAMPLE	DUPLICATE	METALS, PCBs ANALYSES	LEAD ISOTOPE	TOTAL ORG. CARBON	CATION EXCH CAPACITY
BAGHOUSE AREA	B253	NE	X	X	X			
	B254	NE	X		X			
	B255	NE						
	B256	0–7.8						
	B257	NE						
	B258	0–2.3						
	B259	0–3.0						
	B260	0–2.0	X		X			
	B261	0–2.0						
	B262	0–2.1						
	B263	0–1.5	X	X	X			
	B264	0–1.9	X		X			X
	B265	0–2.3	X		X			
	B266	0–1.3	X		X			X
	B267	NE						
	B268	0–3.0	X		X			
	B269	0–2.4	X		X			
	B270	NE						
	B271	0–3.0						
	B272	0–2.8	X		X			
	B273–OW	0–5.3	X		X			
	B274	0–1.8						
	B275	0–2.5	X		X			
	B276	0–3.3	X		X			
FILL AREA	B278–OW	0–3.0	X		X			
	B279–OW	0–2.0						
	B280–OW	0–1.0						
SOUTHWEST END OF PLANT 2	B281–OW	0–2.2						
LBS–3 AREA	B282	0–2.0**	X		X		X	X
	B283	0–2.0**	X		X			
	B284	0–2.0**	X		X		X	X
	B285	0–4.2**	X		X			
NEAR OUTFALL 001	B286–OW	0–0.5						
MAINTENANCE AREA	B287–OW	NE						
	B288	NE						
	B289	0–3.5						
	B290–OW	0–2.3						
TRENCHES IN FILL AREA	TP201	0–1.5	X		X		X	X
	TP202	0–3.5	X		X		X	X
STORM SEWER DISCHARGE *	SDS–1–6		X		X		X	
	SDS–1–7		X		X		X	
	SDS–1–8		X		X		X	

NOTES:

1. –OW indicates observation well installed in completed borehole.
2. See Appendix A for Test Boring Reports.
3. See Tables III and IV for summary of laboratory analytical results.
4. * Indicates sample collected from storm sewer manholes.
5. NE = Fill was not encountered in the exploration.
6. ** Indicates bottom of fill was not encountered during exploration.

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H & A OF NEW YORK
ROCHESTER, NEW YORK

TABLE II
ROTH BROS. SMELTING CORP.
LEAD ISOTOPE SAMPLE SUMMARY

LOCATION	SAMPLE NUMBER	LEAD CONCENTRATION	REMARKS
PAVED FILL AREA	B215	6220 PPM	ORIGINAL SAMPLE, pH 8.7
	B215	7.88 PPM	LEACHATE, pH<2
	B217	33.4 PPM	ORIGINAL SAMPLE, pH 9.4
	B217	ND	LEACHATE, pH<2
	B220	3740 PPM	ORIGINAL SAMPLE, pH 9.3
	B220	0.79 PPM	LEACHATE, pH<2
	B228	10300 PPM	ORIGINAL SAMPLE, pH 9.5
	B228	29.2 PPM	LEACHATE, pH<2
NATIVE SOIL	NGB-1	6 PPM	ORIGINAL SAMPLE
	NGB-2	15 PPM	ORIGINAL SAMPLE
LEAD DUST COMPOSITE	LDC-1	approx. 20%	LEAD DUST COLLECTED FROM HAZ. WASTE STORAGE BINS IN BAGHOUSE ALONG WEST PROPERTY BOUNDARY.
STACK SAMPLE	STACK #1	NAV	STACK SAMPLES WERE COLLECTED BY UPSTATE LABORATORY
	STACK #2	NAV	ON GLASS FIBER FILTERS WITH A 99.98% COLLECTION
	STACK #3	NAV	EFFICIENCY DOWN TO PARTICLE SIZE OF 0.3 MICRONS.
	STACK #4	NAV	
	STACK #5	NAV	
	FILTER BLANK	NAV	BLANK FOR QUALITY CONTROL

NOTES:

1. NAV = Data not aavailable.
2. PPM = Part per million.
3. See Table V for lead isotopic analyses data; see Figure 5 for plot of data.

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TABLE III
ROTH BROS. SMELTING CORP.
PLANT 2

SUMMARY OF LABORATORY ANALYTICAL DATA
SOIL/FILL SAMPLES

LOCATION	SAMPLE NO.	DEPTH IN FEET	LEAD TOTAL	LEAD TCLP	PCB 1232	PCB 1242	PCB 1248	PCB 1254	PCB 1260	PCB TOTAL	pH VALUE	TOC	CEC
PAVED FILL AREA	B201-S1A	0.9-2.9	105	0.372	ND	ND	16.4	ND	ND	16.4	6.2		
NORTH OF PLANT 2	B201-S1B	0.9-2.9	68.2	0.461	ND	ND	23.9	ND	ND	23.9	7.4		
	B202-S1	1.0-3.0	575	1.49	ND	ND	82.7	ND	ND	82.7	9.2		
	B205-S1	1.0-3.0	131	0.226	ND	ND	13.5	ND	ND	13.5	8.3		
	B206-S1	1.0-3.0	2240	ND	ND	ND	20.6	ND	ND	20.6	8.9		
	B209-S1	1.0-3.0	302	0.383	ND	ND	1.4	ND	ND	1.40	9.0		
	B210-S1A	1.5-3.5	557	2.36	ND	ND	ND	3.70	ND	3.70	6.8		
	B210-S1B	1.5-3.5	6940	2.46	ND	ND	ND	3.73	ND	3.73	8.9		
	B212-S1	1.0-3.0	5.90	ND	ND	ND	0.025	ND	ND	0.025	9.5		
	B213-S1	1.0-3.0	35.3	ND	ND	ND	0.026	0.146	ND	0.172	8.7		
	B214-S1	1.0-3.0	231	ND	ND	ND	0.071	0.131	ND	0.202	8.9		
	B215-S1	1.0-3.0	6220	7.88	ND	0.550	ND	0.760	ND	1.31	8.7	1.47	4.14
	B216-S1	1.0-3.0	366	2.92	4.23	ND	ND	1.44	ND	5.67	8.4		
	B217-S1	1.0-3.0	33.4	ND	ND	ND	ND	0.238	ND	0.238	9.4	2.38	18.1
	B218-S1	1.0-3.0	124	4.54	ND	ND	1.89	1.53	ND	3.42	8.85		
	B219-S1	1.0-3.0	2370	7.52	ND	ND	ND	60.3	ND	60.3	9.0		
	B220-S1	1.0-3.0	3740	0.790	ND	ND	15.2	16	ND	31.2	9.3		
	B221-S1	1.0-3.0	98.9	ND	ND	ND	ND	ND	ND	0	8.9		
	B223-S1	1.0-3.0	56.7	ND	ND	ND	16.5	ND	ND	16.5	8.9		
	B225-S1	1.0-3.0	9730	ND	3.64	ND	ND	2.37	ND	6.01	9.0		
	B226-S1	1.0-3.0	314	2.11	ND	ND	0.738	1.10	ND	1.84	8.7		
	B228-S1	1.5-2.5	10300	29.2	ND	ND	0.362	0.671	ND	1.03	9.5	1.43	12.3
	B229-S1	1.0-3.0	156	0.730	ND	ND	7.35	1.05	ND	8.40	10.1		
	B231-S1	1.0-3.0	29.9	0.195	ND	ND	0.580	0.070	ND	0.650	10.0		
	B233-S1	1.0-3.0	250	1.13	2.38	ND	ND	1.81	ND	4.19	8.7		
	B234-S1	1.0-3.0	64.3	11.0	0.236	ND	ND	0.030	ND	0.266	7.9		
	B237-S1	1.0-3.0	196	ND	ND	ND	0.512	0.648	ND	1.16	7.15		
	B238-S1	1.0-3.0	160	ND	ND	ND	1.28	0.399	ND	1.68	6.9		
	B239-S1	1.0-3.0	31.4	ND	ND	ND	ND	0.027	ND	0.027	6.4		
	B239-S2	3.0-5.0	1280	21.6	ND	ND	0.894	0.761	ND	1.66	7.2		
	B241-S1	0.5-2.5	ND	0.160	ND	ND	ND	ND	ND	0.0	8.75		
	B243-S1	1.0-3.0	40000	ND	ND	ND	0.904	ND	ND	0.904	8.95		
	B243-S2	3.0-5.0	56500	30.7	ND	ND	4.97	ND	ND	4.97	11.5		
	B245-S1	1.0-3.0	14700	ND	ND	ND	1.05	ND	ND	1.05	10.4		
	B250-S1	0.0-2.0	15000	28.0	ND	ND	1.32	3.82	ND	5.14	9.55		
	B251-S1	0.0-2.0	3570	28.0	ND	ND	6.00	3.63	ND	9.63	9.2		
	B252-S1	0.0-2.0	147	ND	ND	ND	19.3	ND	ND	19.3	11.5		
COMPARISON CRITERIA (2)			500	5.00						25			

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TABLE III
ROTH BROS. SMELTING CORP.
PLANT 2

SUMMARY OF LABORATORY ANALYTICAL DATA
SOIL/FILL SAMPLES
(page 2 of 2)

LOCATION	SAMPLE NO.	DEPTH IN FEET	LEAD TOTAL	LEAD TCLP	PCB 1232	PCB 1242	PCB 1248	PCB 1254	PCB 1260	PCB TOTAL	pH VALUE	TOC	CEC
BAGHOUSE/SCRAP	B253-S1	1.0-3.0	34.8	ND	ND	ND	ND	ND	ND	0.0	10.4		
STORAGE AREA	B254-S1	1.0-3.0	16.0	ND	ND	ND	ND	ND	ND	0.0	10.1		
	B254-S2	3.0-5.0	ND	ND	ND	ND	ND	ND	ND	0.0	8.5		
	B260-S1A	1.0-3.0	44.6	ND	ND	ND	ND	0.980	ND	0.0	7.0		
	B260-S1B	1.0-3.0	33.0	ND	ND	ND	ND	0.076	ND	.980	6.8		
	B263-S1A	1.0-3.0	17.7	ND	ND	ND	0.021	0.285	ND	.076	8.7		
	B263-S1B	1.0-3.0	63.2	ND	ND	ND	ND	ND	ND	.306	8.8		
	B263-S2	3.0-5.0	ND	ND	ND	ND	0.711	0.691	ND	0.0	8.3		
	B264-S1	0.5-2.5	29600	189	ND	ND	0.380	0.593	ND	1.402	7.6		10.2
	B265-S1	0.5-2.5	ND	ND	ND	ND	ND	0.133	ND	.973	8.2		
	B266-S1	0.5-2.5	30.0	ND	ND	ND	ND	0.031	ND	.133	8.9		6.98
	B268-S1	0.5-2.5	64.0	ND	ND	ND	ND	4.95	ND	.031	8.65		
	B269-S1	0.5-2.5	ND	ND	ND	ND	ND	ND	ND	4.95	6.9		
	B272-S1	1.0-3.0	36.3	ND	ND	ND	ND	0.267	ND	0.0	8.6		
	B273-S1	1.0-3.0	33.0	ND	ND	ND	ND	0.552	ND	.267	7.05		
	B274-S1	1.0-3.0	2980	ND	ND	ND	ND	0.517	ND	.552	10.15		
	B275-S1	1.0-3.0	152	ND	ND	ND	ND	0.060	ND	.517	9.6		
	B276-S1	1.0-3.0	350	ND	ND	ND	ND	ND	ND	.060	8.4		
FILL AREA	B278-S1	0-2.0	752	5.05	ND	ND	72.3	ND	ND	72.3	7.6		8.79
	B278-S2	2.0-4.0	120	ND	ND	ND	27.7	ND	ND	27.7	8.55		
	B278-S3	4.0-6.0	ND	ND	ND	ND	0.067	ND	ND	.067	7.2		
	TP201-J1	1.5-2.5	563	4.35	ND	ND	29.4	ND	ND	29.4	10.35	1.40	4.26
	TP201-J2	2.5-3.0	42.0	ND	ND	ND	1.62	ND	ND	1.62	10.2	ND	3.33
	TP202-J1	2.5-3.0	348	5.40	ND	ND	164	ND	ND	164	8.9		
LBS-3 AREA	B282-S1	0-2.0	1850	12.2	ND	ND	7.13	ND	ND	7.13	8.15	1.37	6.00
	B283-S1	0-2.0	2650	22.7	ND	ND	3.19	ND	ND	3.19	8.2		
	B284-S1	0-2.0	1530	14.3	ND	ND	40.1	ND	ND	40.1	8.75	1.04	6.06
	B285-S1	0-4.0	3740	21.0	ND	ND	0.447	0.803	ND	1.25	7.95		
STORM SEWER	SDS-1-6	0-0.3	26500	157	ND	ND	9.20	ND	1.72	10.92	8.9	2.15	
DISCHARGE	SDS-1-7	0-0.3	35700	74.5	ND	ND	10.3	ND	1.65	11.95	8.7	7.23	
	SDS-1-8	0-0.3	41500	135	ND	ND	1.78	ND	2.80	4.58	7.55	11.5	
COMPARISON CRITERIA (2)			500	5.00						25			

NOTES:

1. Concentrations expressed in parts per million (ppm). See also note 7.
2. Concentrations which are outlined exceed comparison criteria.
   Comparison criteria consist of: 1) Superfund Record of Decision: United Scrap Lead, OH (Sept. 1988); 1987) 2) EPA Regulatory Levels for Toxicity Characteristics Constituents; and 3) EPA 40 CFR Part 761 PCB Spill Cleanup Policy 1987.
3. ND indicates analyte not detected above laboratory detection limits.
4. TCLP: Toxicity Characteristic Leaching Procedure
5. TOC: Total Organic Carbon. Analyses performed on subset of 10 samples.
6. PCB Total: Sum total of PCBs detected.
7. CEC: Cation Exchange Capacity. Analyses only performed on subset of 10 samples. Concentrations expressed in milliequivalents per 100 grams (meq/100 g).

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TABLE IV
ROTH BROS. SMELTING CORP.
PLANT 2

SUMMARY OF LABORATORY ANALYTICAL DATA
GROUNDWATER SAMPLES

WELL NO.		B273-OW	B277-OW	B277-OW DUPLICATE	B278-OW * NOV./JAN	B279-OW * NOV./JAN	B279-OW DUPLICATE	B280-OW	B281-OW	B286-OW	B287-OW	B290-OW	B291-OW	B292-OW	B293-OW	WATER QUALITY CRITERIA TOGS 1.1.1 CLASS GA GW	6 NYCRR PART 703.5 GW STDS.	10 NYCRR PART 5 DW STDS.
ALUMINUM	TOTAL	7.48	1.85	40.1	211 / 8.22	8.30 / 7.30	16.7	24.8	4.20	8.70	1.47	17.0	27.1	5.70	17.7			
	DISS.	ND	ND	ND	0.16 / 0.22	20.0 / 3.51	3.84	0.11	ND	ND	0.120	ND	ND	ND	ND	NAV	NAV	NAV
CALCIUM	TOTAL	447	177	187	180 / 34.2	44.9 / 22.9	25.8	172	197	355	426	371	177	98.2	123			
	DISS.	428	93.0	ND	6.84 / 19.8	35.4 / 25.5	27.6	97.0	190	314	464	255	94.1	65.3	70.5	NAV	NAV	NAV
IRON	TOTAL	15.9	52.5	54.7	299 / 10.2	93.1 / 55.7	44.7	23.7	3.18	7.73	1.07	27.5	662	18.5	14.6			
	DISS.	0.165 JMt	ND JMt	0.151 JMt	0.575 JMt / 0.225	39.0 JMt / 8.75	9.48	ND JMt	ND JMt	ND JMt	ND JMt	0.025 JMt	0.076	0.109	ND	0.300 TS	0.300	0.300 (A)
POTASSIUM	TOTAL	19.5	12.0	13.9	47.0 / 8.45	14.1 / 4.36	7.19	9.80	5.52	15.6	5.15	12.4	9.97	6.44	5.41			
	DISS.	9.11	15.5	1.45	1.46 / 2.94	5.04 / 4.13	5.00	0.296	3.54	10.9	5.47	4.47	1.71	2.32	3.10	NAV	NAV	NAV
LEAD	TOTAL	ND	ND	0.058	1.52 / 0.0477	0.284 / 0.293	0.212	ND	ND	ND	ND	0.039	0.0266	0.292	0.0268			
	DISS.	ND	ND	ND	ND / ND	0.117 / 0.0142	0.0197	ND	ND	ND	ND	ND	ND	ND	ND	0.025 TS	0.025	0.050
PCBs		ND (Total)	ND (Total)	ND (Total)	24.4 / ND (Total)/(Diss.)	ND / ND (Total)/(Diss.)	ND (Diss.)	ND (Total)	ND (Total)	ND (Total)	ND (Total)	ND (Total)	ND (Diss.)	ND (Diss.)	ND (Diss.)	0.0001 TS	0.0001	
PET. HYDROCARBON (IR)		NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	4.52	NA	NA	NA			
PET. HYDROCARBON (GC)		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA	NA	NA			
pH (After Dovol., 1/29/91)		6.60	7.50	NA	8.5	7.9	NA	NA	7.2	7.3	7.2	7.2	7.8	8.2	7.5			
CONDUCTIVITY (1/29/91)		5700	1350	NA	3200	5100	NA	NA	2070	2660	2420	2100	1500	1900	1620			
TEMPERATURE (C - 1/24/91)		8.80	24.2	NA	20.6	14	NA	NA	23.7	22.9	17.3	12.3	NA	NA	NA			

NOTES:

1. Concentrations expressed in parts per million (ppm).
2. Concentrations which are outlined exceed water quality criteria.
3. ND indicates analyte not detected above laboratory detection limits.
4. TS = TOGS 1.1.1 Standard. See Note 7.
5. (A) Total concentration of Iron and Manganese should not exceed 500 ug/l (0.500 ppm).
6. NAV = Data not available
7. Water quality criteria references:
   TOGS 1.1.1: NYSDEC Division of Water Technical and Operational Guidance Series (1.1.1),
   "Ambient Water Quality Standards and Guidance Values, April 1, 1987, NYSDEC Memorandum.
   NYCRR, Title 6, Chapter X, "Water Quality Regulations - Surface Water and Groundwater Classifications and Standard", Part 703, Paragraph 703.5, NYSDEC, Revised March 31, 1986.
   NYCRR, Title 10, Part 5, "Regulations for Drinking Water Supplies", NYSDOH.
8. Total samples were not filtered and contained sediment. Dissolved (Diss.) samples were field filtered.
9. JMt = Indicates an estimated value due to matrix spike and/or matrix spike duplicate outside control limits. Matrix interference suspected; repeat analysis still unacceptable.
10. NA = Indicates sample not analyzed.
11. pH and Conductivity analyzed on 29 January 1991 by H&A of New York personnel.
12. * = Indicates well was sampled during two events. Data presented shows results from both events.

odh:70185-42\grwater

TABLE V
ROTH BROS. SMELTING CORP.
PLANT 2

LEAD ISOTOPIC ANALYSES

Location	Sample	Pb Conc. (ppm)	208Pb/204Pb	% Std. Err.	207Pb/204Pb	% Std. Err.	206Pb/204Pb	% Std. Err.	206Pb/207Pb	% Std. Err.
PAVED FILL	B215-S1 L	7.88	37.782	0.016	15.527	0.014	18.102	0.016	1.166	0.011
AREA	B228-S1 L	29.2	38.504	0.022	15.650	0.045	19.236	0.019	1.123	0.049
	B217-S1 L	ND	38.110	0.082	15.571	0.080	18.511	0.092	1.189	0.021
	B220-S1 L	0.79	38.004	0.159	15.542	0.123	18.425	0.161	1.184	0.137
	B215-S1	6220	37.840	0.015	15.539	0.013	18.124	0.015	1.166	0.013
	B228-S1	10300	38.669	0.016	15.688	0.016	19.281	0.017	1.229	0.017
	B217-S1	33.4	37.993	0.008	15.553	0.007	18.274	0.007	1.175	0.007
	B220-S1	3740	38.034	0.164	15.545	0.127	18.365	0.181	1.177	0.200
STACK	Stack #1	--	38.474	0.021	15.644	0.018	19.238	0.028	1.229	0.034
EMISSIONS	Stack #2	--	38.623	0.033	15.667	0.014	19.389	0.026	1.238	0.023
	Stack #3	--	38.556	0.041	15.654	0.031	19.195	0.039	1.227	0.052
	Stack #4	--	38.371	0.006	15.623	0.007	19.022	0.008	1.218	0.006
	Stack #5	--	38.130	0.015	15.584	0.012	18.710	0.015	1.200	0.010
BAGHOUSE DUST	LDC-1	* 200000	38.360	0.016	15.638	0.009	19.054	0.022	1.218	0.017
NATIVE SOIL	NBG-1	6	38.058	0.083	15.531	0.064	18.640	0.109	1.200	0.124
	NBG-2	15	38.274	0.009	15.604	0.006	18.956	0.008	1.215	0.005

NOTES:

1. Lead isotopic analyses was conducted by the Department of Geological Sciences, University of Rochester. Samples were provided to the University by H&A of New York.
2. Lead concentrations shown in the third column are derived from TCLP and total lead analyses conducted by General Testing Corporation (GTC).
3. * Lead concentration for LDC-1 (Baghouse Dust) is an approximation. The sample was not analyzed by GTC.
4. L indicates sample consists of leachate derived from the TCLP analyses.
5. ND indicates lead was not detected above laboratory detection limits.
6. -- indicates data not available.
7. See Figure 5 for plot of data in this table.

edh\70185-42\h&a-load

TABLE VI
ROTH BROS. - PLANT 2
ALTERNATIVE REMEDIAL TECHNOLOGIES
Page 2 of 2

METHOD NAME	DEVELOPER	SYNOPSIS OF METHOD	APPLICABILITY	REMARKS	ESTIMATED UNIT COST
In-Situ Vitrification	GeoSafe Corporation	Melt soil in place at 1600-2000 C, thereby creating a vitrified mass of soil.	Soils/sludges with organic and inorganic pollutants.	Volume reduced by 20-40%. Wastes immobilized into vitrified monolith with structural and environmental properties.	$310-360/Ton
Encapsulation	--	Excavate soil and place on liner; cover with multi-layer low permeability cap to prevent infiltration.	Most wastes except non-polor orgnaics	Isolation technology.	$62/Ton

Note: This table presents an outline of potentially applicable technologies for site remediation. Further evaluation of these technologies and others would be necessary to determine the most appropriate technology for the Roth Bros. Plant 2 site.

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TABLE VII
VOLUME SUMMARY

COMPOUNDS IN SOIL	VOLUME TOTALS
1. Total lead + TCLP Lead + PCB	13,930 cy = 19,500 T*
2. TCLP Lead + PCB	3,700 cy = 5,185 T
3. Total Lead + TCLP lead	13,900 cy = 19,500 T
4. PCBs	1,220 cy = 1,700 T

Notes:

1. * Assumes 1 cy = 1.4 T
2. Volume summary is for estimating purposes only and may not reflect actual site conditions encountered.

COST ESTIMATES FOR SELECTED TECHNOLOGIES

METHOD	DISPOSAL/TREATMENT COSTS	TOTAL COST ESTIMATE**
1. Offsite Disposal	$5.4 to $7.1 million	$7.0 to $9.2 million
2. In-Situ Solidification	$3.8 million	$5.0 million
3. Silicate Stabilization	$2.1 million	$2.7 million
4. Capping In-Place	$0.6 to $0.8 million	$0.8 to $1.0 million
5. In-Situ Vitrification	$6.1 to $7.1 million	$7.9 to 9.2 million
6. Encapsulation	$1.1 million	$1.4 million

Notes:

1. ** Includes 30% for material excavation, handling, laboratory analyses and engineering. Additional costs may be incurred depending on specific regulatory program criteria under which remediation takes place.
2. Disposal and treatment costs are estimates only based on literature reviewed. Actual costs will be determined based on pilot scale tests implementation, specifically for options 2, 3, and 5.
3. Treatment costs reflect treatment for 19,500 Tons of soil/fill material and sediments containing high lead, high TCLP lead and PCBs.

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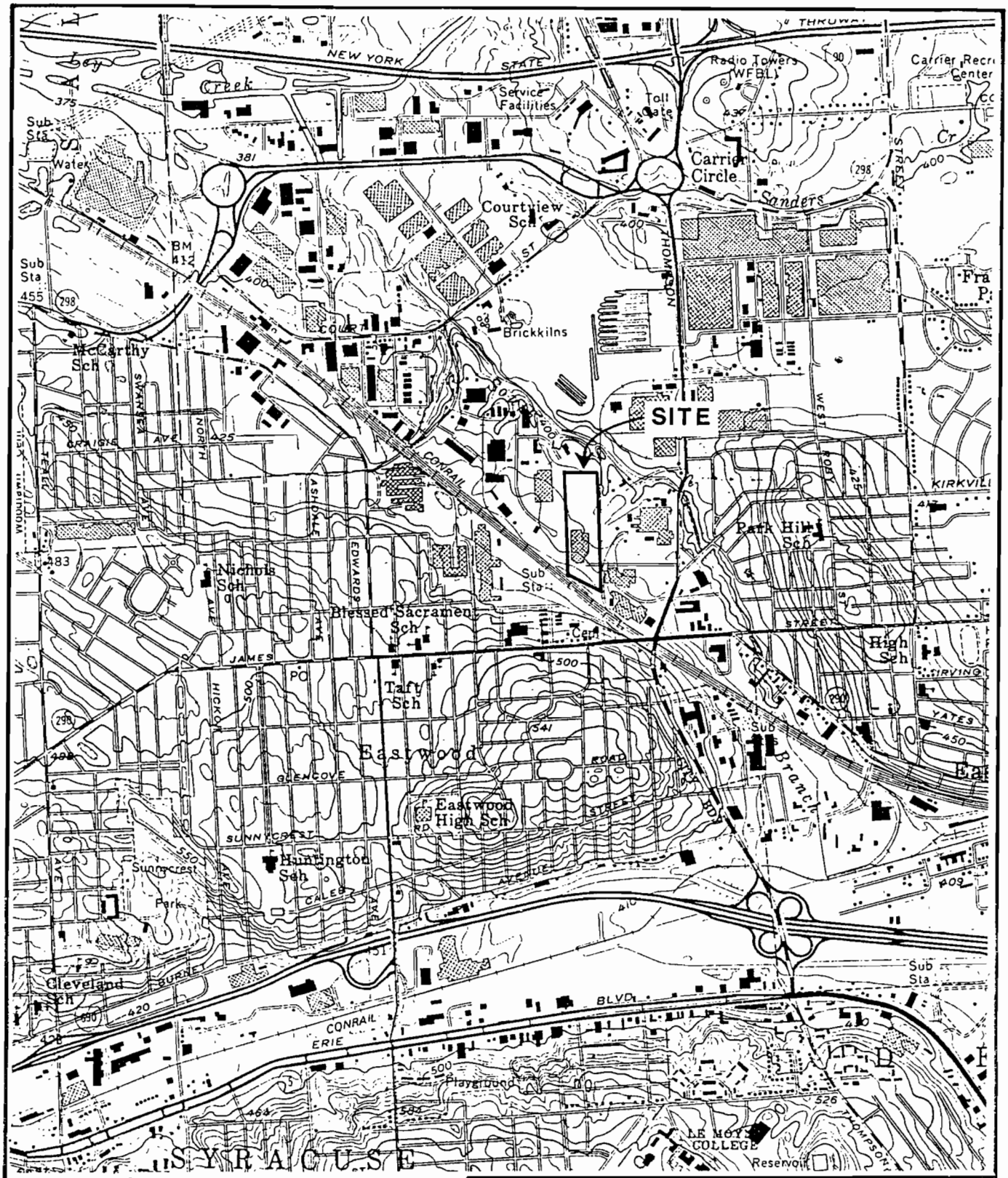


H&A of New York
Consulting Geotechnical Engineers, Geologists and Hydrogeologists

ROTH BROS. SMELTING CORP.
SYRACUSE, NEW YORK

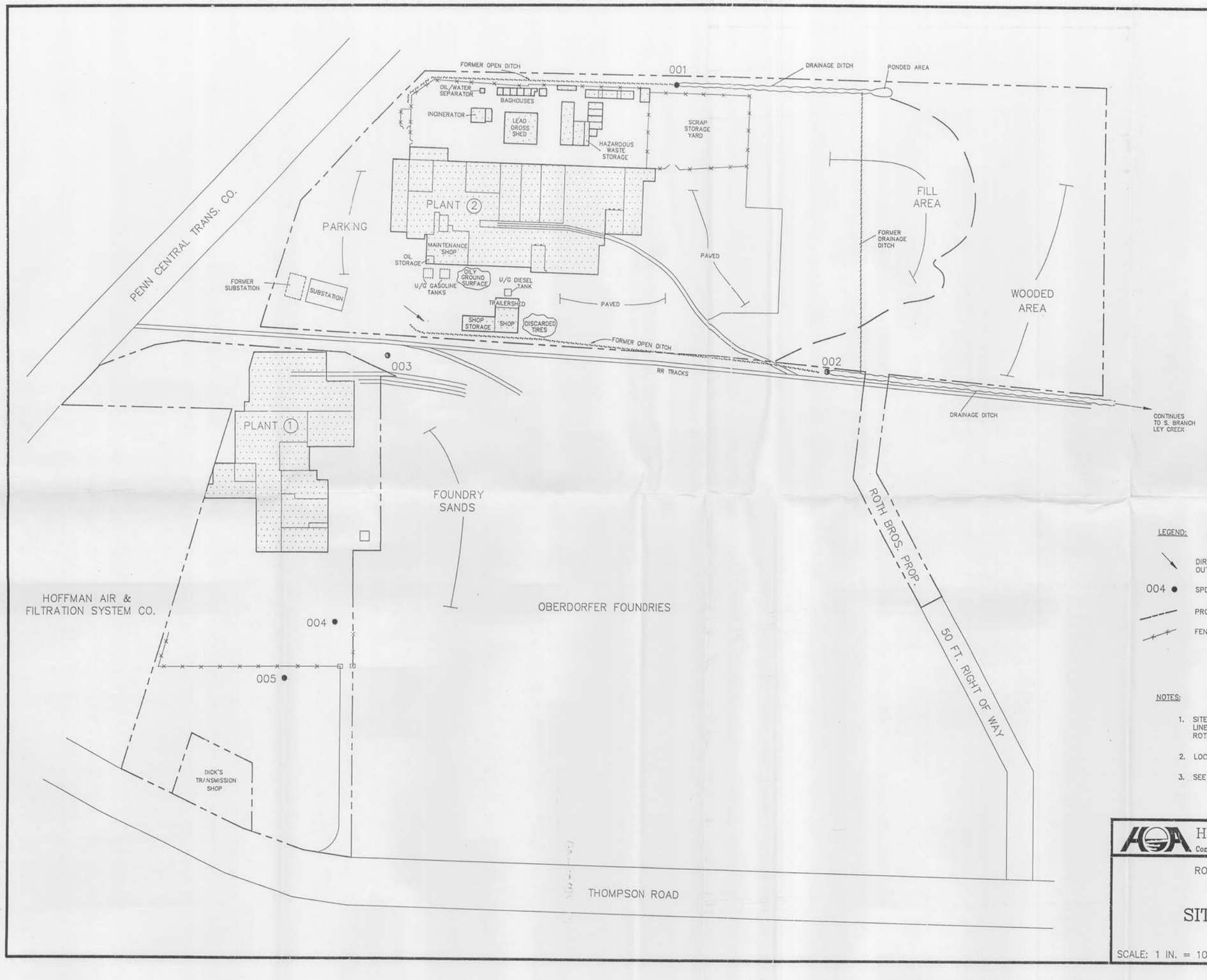
PROJECT LOCUS

SCALE: 1 IN. = 2000 FT. MAY 1991

FILE NO. 70185-40

CHARRETTE

FIGURE 1



LEGEND:

- DIRECTION OF DRAINAGE AS PER SPDES OUTFALL SYSTEM.
- 004 ● SPDES OUTFALL LOCATION.
- PROPERTY LINE
- FENCELINE

NOTES:

1. SITE PLAN DERIVED FROM "PLOT PLAN/PROPERTY LINES, BUILDINGS, AND HAZARDOUS WASTE STORAGE", ROTH BROS SMELTING CORP., 25 MAY 1984.
2. LOCATIONS OF SITE FEATURES ARE APPROXIMATE.
3. SEE TEXT FOR ADDITIONAL INFROMATION.

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Consulting Geotechnical Engineers, Geologists and Hydrogeologists

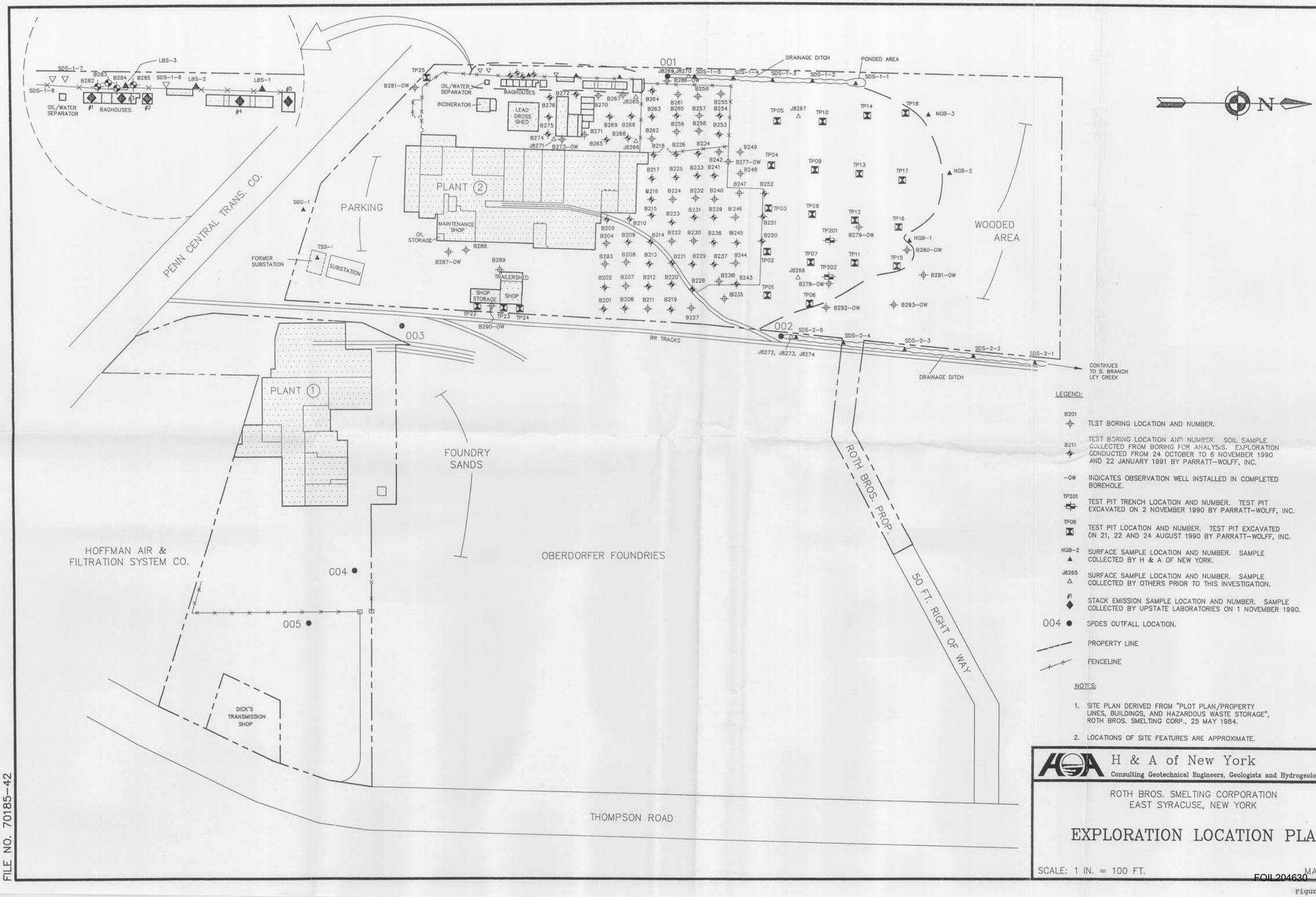
ROTH BROS. SMELTING CORPORATION
EAST SYRACUSE, NEW YORK

SITE PLAN – PLANT 2

SCALE: 1 IN. = 100 FT.

MAY 1991

FILE NO. 70185-40



LEGEND:

- B201 — TEST BORING LOCATION AND NUMBER.
- B211 — TEST BORING LOCATION AND NUMBER. SOIL SAMPLE COLLECTED FROM BORING FOR ANALYSIS. EXPLORATION CONDUCTED FROM 24 OCTOBER TO 6 NOVEMBER 1990 AND 22 JANUARY 1991 BY PARRATT-WOLFF, INC.
- -OW — INDICATES OBSERVATION WELL INSTALLED IN COMPLETED BOREHOLE.
- TP201 — TEST PIT TRENCH LOCATION AND NUMBER. TEST PIT EXCAVATED ON 2 NOVEMBER 1990 BY PARRATT-WOLFF, INC.
- TP06 — TEST PIT LOCATION AND NUMBER. TEST PIT EXCAVATED ON 21, 22 AND 24 AUGUST 1990 BY PARRATT-WOLFF, INC.
- NGB-2 — SURFACE SAMPLE LOCATION AND NUMBER. SAMPLE COLLECTED BY H & A OF NEW YORK.
- J8265 — SURFACE SAMPLE LOCATION AND NUMBER. SAMPLE COLLECTED BY OTHERS PRIOR TO THIS INVESTIGATION.
- #1 — STACK EMISSION SAMPLE LOCATION AND NUMBER. SAMPLE COLLECTED BY UPSTATE LABORATORIES ON 1 NOVEMBER 1990.
- 004 — SPDES OUTFALL LOCATION.
- PROPERTY LINE
- FENCELINE

NOTES:

1. SITE PLAN DERIVED FROM "PLOT PLAN/PROPERTY LINES, BUILDINGS, AND HAZARDOUS WASTE STORAGE", ROTH BROS. SMELTING CORP., 25 MAY 1984.
2. LOCATIONS OF SITE FEATURES ARE APPROXIMATE.

H & A of New York
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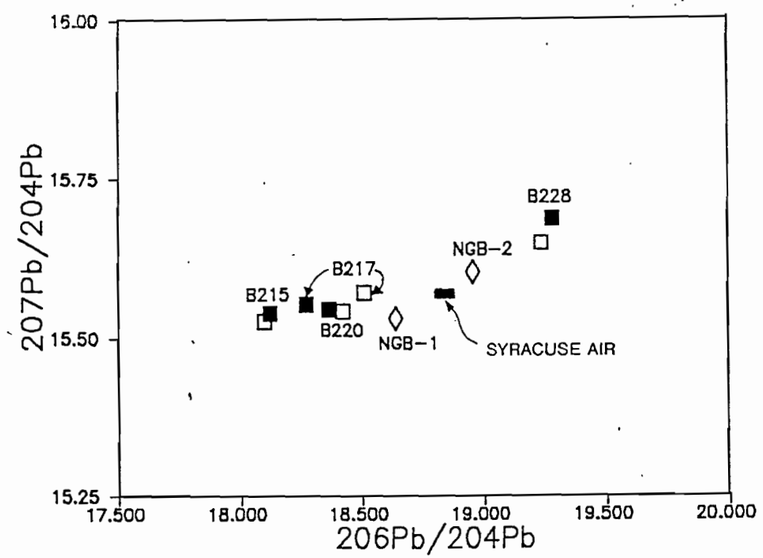
ROTH BROS. SMELTING CORPORATION
EAST SYRACUSE, NEW YORK

EXPLORATION LOCATION PLAN

SCALE: 1 IN. = 100 FT. MAY 1991

FILE NO. 70185-42

ROTH BROS. SMELTING CORP.
LEAD ISOTOPIC ANALYSES – FILL

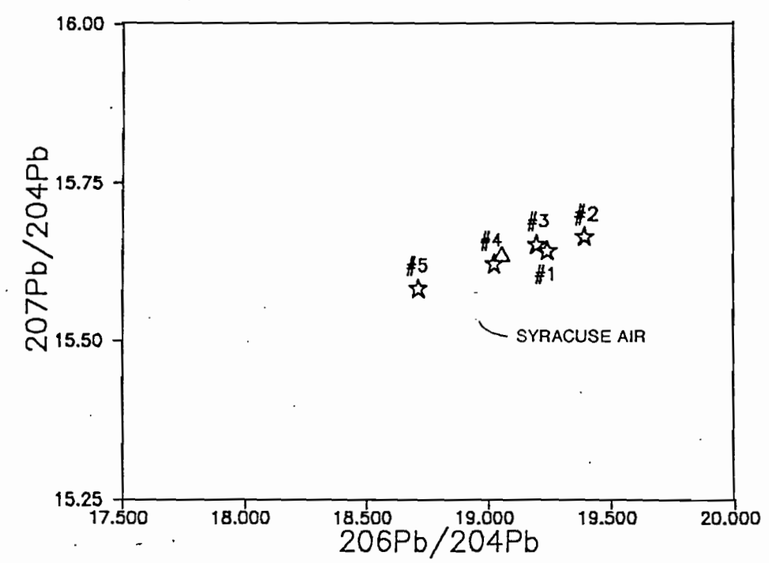


FILL (SEE NOTE 1)
NATIVE SOILS

NOTES:

1. SOLID SQUARE ■ REPRESENTS LEACHATE OF FILL MATERIALS. OPEN SQUARE □ REPRESENTS TOTAL LEAD.
2. ISOTOPIC ANALYSES PERFORMED BY DEPARTMENT OF GEOLOGICAL SCIENCES, UNIVERSITY OF ROCHESTER.
3. STACK EMISSION SAMPLES COLLECTED BY UPSTATE LABORATORIES.
4. SEE FIGURE 2 FOR EXPLORATION LOCATIONS.

ROTH BROS. SMELTING CORP.
LEAD ISOTOPIC ANALYSES – STACK & DUST



STACK EMISSIONS (BY STACK NUMBER)
BAGHOUSE DUSTS

FILE NO. 70185-42

CHARRETTE

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ROTH BROS. SMELTING CORP.
EAST SYRACUSE, NEW YORK

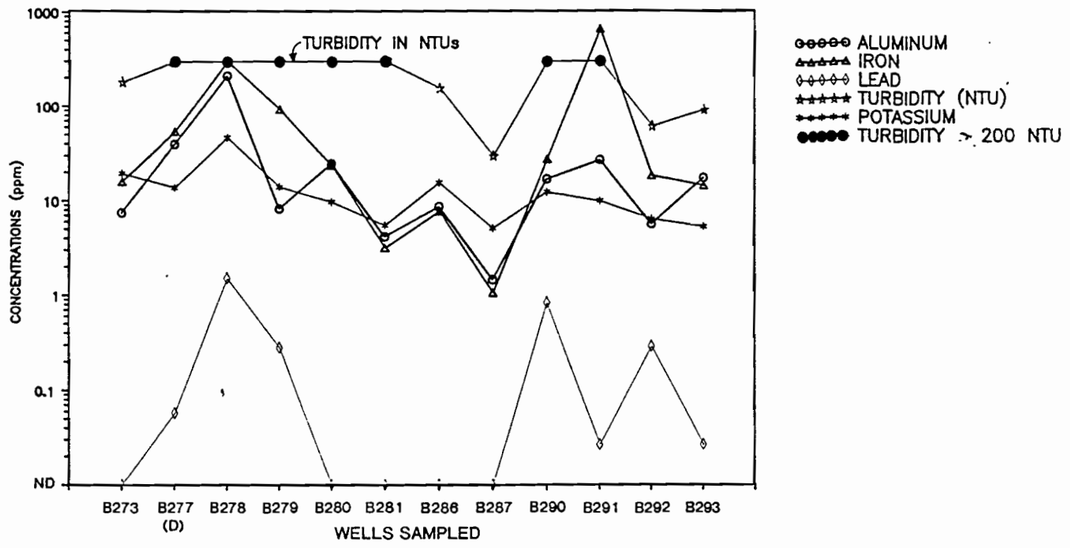
LEAD ISOTOPIC DATA

MAY 1991

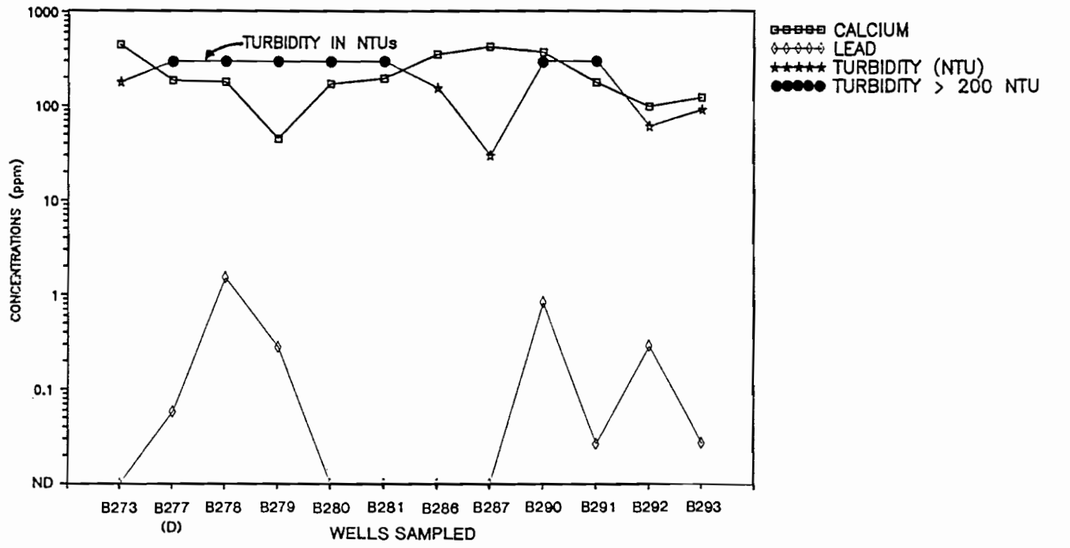
FIGURE 4

FOIL204631

GROUNDWATER QUALITY RESULTS
TOTAL METALS – Al, Fe, K, Pb



GROUNDWATER QUALITY RESULTS
TOTAL METALS – Ca, Pb



NOTES:

1. TURBIDITY VALUES WERE MEASURED UP TO A 200 NEPHELOMETRIC TURBIDITY UNIT (NTU) CEILING. SEVERAL WELLS HAD NTU VALUES HIGHER THAN THE 200 NTU LIMIT, THEREFORE THE PEAKS MAY BE MORE PRONOUNCED THAN WHAT IS INDICATED.

2. CONCENTRATIONS OF LEAD INDICATED BY ◊◊◊◊ SYMBOL ARE NON-DETECT FOR B273-OW, B280-OW, B281-OW, B286-OW AND B287-OW.

3. (D) = DUPLICATE SAMPLE COLLECTED FOR B227.

4. ND = ANALYTE NOT DETECTED ABOVE LABORATORY DETECTION LIMITS.

5. ALUMINUM, POTASSIUM AND IRON GENERALLY BEHAVE UNIFORMLY AS A GROUP. THE LEAD ALSO TENDS TO BEHAVE SIMILARLY TO THE ALUMINUM, POTASSIUM AND IRON.

6. THE MAJOR CATION CALCIUM GENERALLY BEHAVES INDEPENDENTLY OF THE TURBIDITY CONCENTRATIONS.

H&A of New York
Consulting Geotechnical Engineers, Geologists and Hydrogeologists

ROTH BROS. SMELTING CORP.
EAST SYRACUSE, NEW YORK

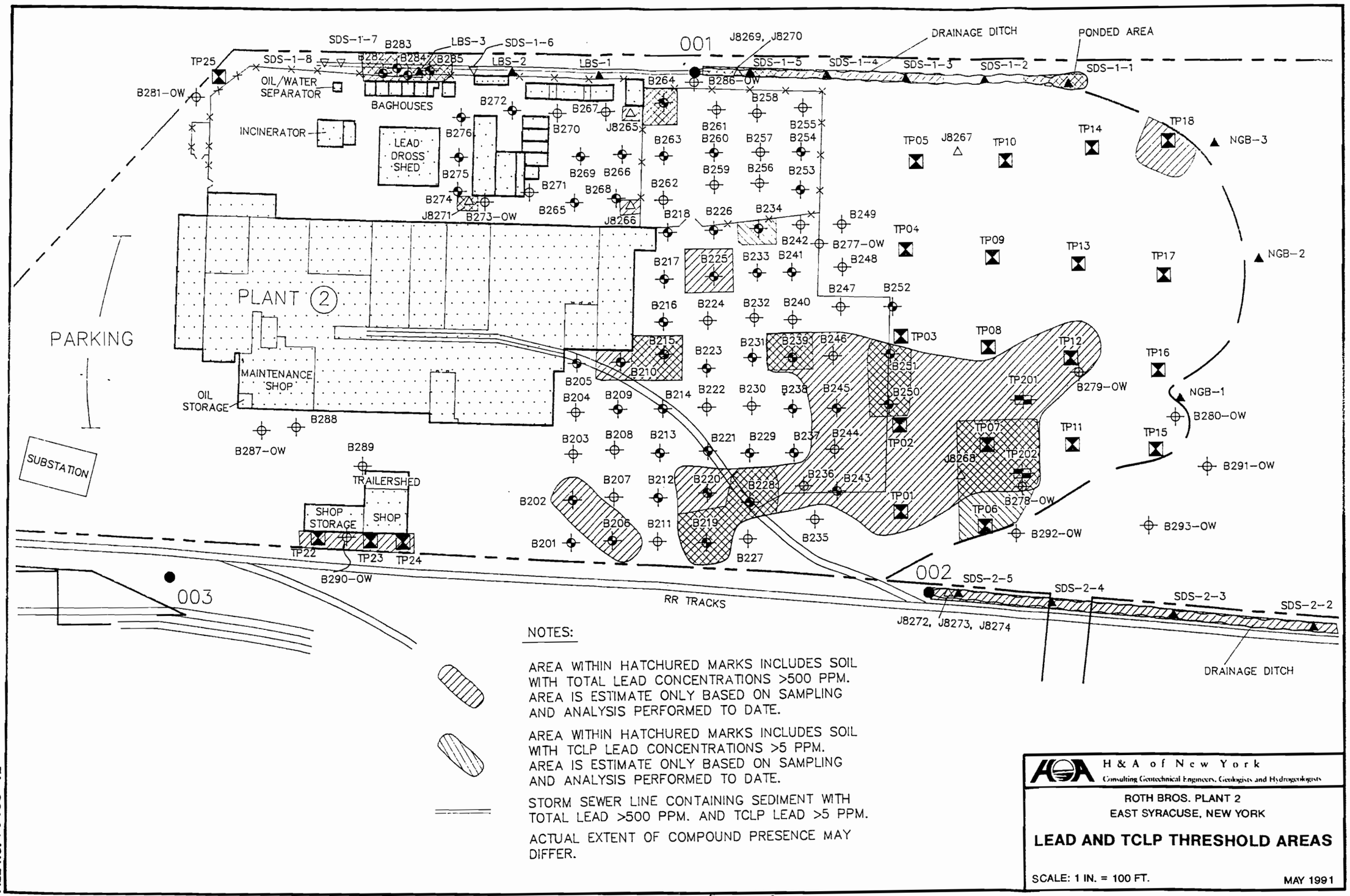
GROUNDWATER QUALITY RESULTS
TOTAL METALS

MAY 1991

FILE NO. 70185-42

CHARRETTE

FIGURE 5



NOTES:

AREA WITHIN HATCHURED MARKS INCLUDES SOIL WITH TOTAL LEAD CONCENTRATIONS >500 PPM. AREA IS ESTIMATE ONLY BASED ON SAMPLING AND ANALYSIS PERFORMED TO DATE.

AREA WITHIN HATCHURED MARKS INCLUDES SOIL WITH TCLP LEAD CONCENTRATIONS >5 PPM. AREA IS ESTIMATE ONLY BASED ON SAMPLING AND ANALYSIS PERFORMED TO DATE.

STORM SEWER LINE CONTAINING SEDIMENT WITH TOTAL LEAD >500 PPM. AND TCLP LEAD >5 PPM.

ACTUAL EXTENT OF COMPOUND PRESENCE MAY DIFFER.

H&A of New York
Consulting Geotechnical Engineers, Geologists and Hydrogeologists

ROTH BROS. PLANT 2
EAST SYRACUSE, NEW YORK

LEAD AND TCLP THRESHOLD AREAS

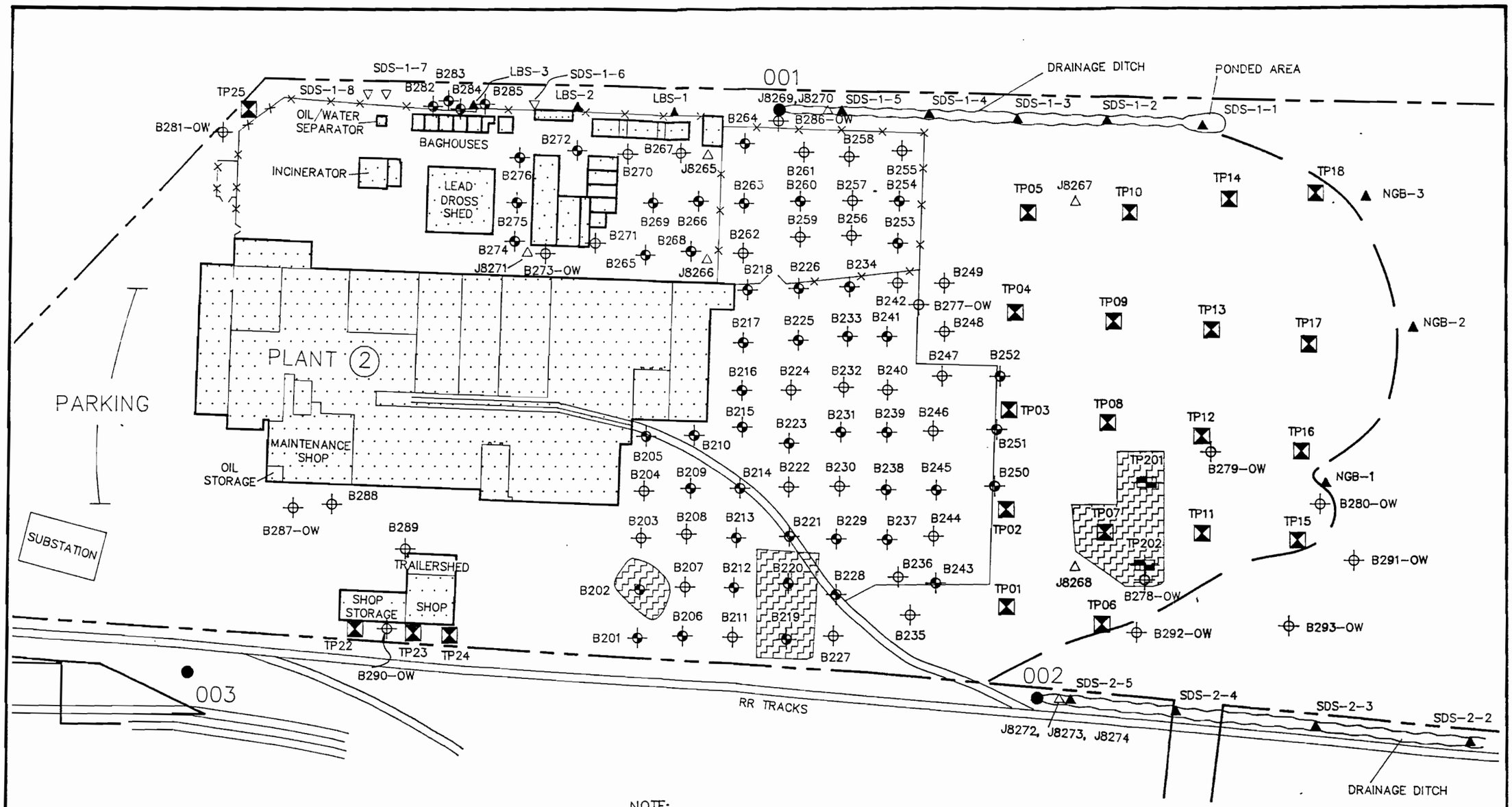
SCALE: 1 IN. = 100 FT.

MAY 1991

FILE NO. 70185-42

CHARRETTE

FIGURE 6



NOTE:

AREA WITHIN HATCHURED MARKS INCLUDES SOIL WITH PCB'S CONCENTRATIONS >25 PPM. AREA IS ESTIMATE ONLY BASED ON SAMPLING AND ANALYSIS PERFORMED TO DATE.

ACTUAL EXTENT OF COMPOUND PRESENCE MAY DIFFER.

H&A of New York
Consulting Geotechnical Engineers, Geologists and Hydrogeologists

ROTH BROS. PLANT 2
EAST SYRACUSE, NEW YORK

PCB THRESHOLD AREAS

SCALE:1 IN. = 100 FT.

MAY 1991

FILE NO. 70185-42

CHARRETTE

FOIL204634

FIGURE 7

APPENDIX A

Test Boring Reports

H&A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists	TEST BORING REPORT	BORING NO. B201

PROJECT: ROTH BROS. SMELTING CORPORATION - PHASE II
CLIENT: NIXON HARGRAVE DEVANS & DOYLE
CONTRACTOR: PARRATT-WOLFF, INC.

FILE NO. 70185-42
SHEET NO. 1 OF 1
LOCATION: See Plan

ITEM	CASING	DRIVE SAMPLER	CORE BARREL
TYPE	Auger	SS	---
INSIDE DIAMETER (IN)	4-1/4	2-3/8	---
HAMMER WEIGHT (LB)	---	140	---
HAMMER FALL (IN)	---	30	---

DRILLING EQUIPMENT & PROCEDURES

RIG TYPE: Mobile B-57, Truck Mounted
BIT TYPE: ---
DRILL MUD; ---
OTHER: Advanced auger through asphalt to 0.9 ft.

ELEVATION:
DATUM:
START: 24 October 1990
FINISH: 24 October 1990
DRILLER: W. Rice
H&A REP: W. Lanik

DEPTH (FT)	CASING BLOWS PER FT	SAMPLER BLOWS PER 6 IN	SAMPLE NUMBER & RECOVERY	SAMPLE DEPTH (FT)	STRATA CHANGE (FT)	VISUAL CLASSIFICATION AND REMARKS
					0.9	-ASPHALT WITH SUB-BASE-
		8 8 9 10	S1 18"/24"	0.9 2.9		Medium dense dark brown sandy SILT, little to trace gravel, trace roots, with wood fragments and glass fragments. -FILL-
		2 2 2 2	S2* 24"/24"	2.9 4.9	3.0	Loose brown interbedded laminated SILT and medium to fine SAND. -LACUSTRINE-
5						Bottom of Boring at 4.9 ft.
10						
15						
20						
25						

Notes:

*1. Sample obtained with 1-3/8 in. ID split spoon.

2. Sample S1 submitted for chemical analysis.

WATER LEVEL DATA

DATE	TIME	ELAPSED TIME (HR)	DEPTH (FT) TO: BOTTOM OF CASING	DEPTH (FT) TO: BOTTOM OF HOLE	DEPTH (FT) TO: WATER

SAMPLE IDENTIFICATION

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon

SUMMARY

OVERBURDEN (LIN FT): 4.9
ROCK CORED (LIN FT): --
SAMPLES: 2S

BORING NO. B201

H&A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists	TEST BORING REPORT	BORING NO. B202

PROJECT: ROTH BROS. SMELTING CORPORATION - PHASE II
CLIENT: NIXON HARGRAVE DEVANS & DOYLE
CONTRACTOR: PARRATT-WOLFF, INC.

FILE NO. 70185-42
SHEET NO. 1 OF 1
LOCATION: See Plan

ITEM	CASING	DRIVE SAMPLER	CORE BARREL
TYPE	Auger	SS	---
INSIDE DIAMETER (IN)	4-1/4	2-3/8	---
HAMMER WEIGHT (LB)	---	140	---
HAMMER FALL (IN)	---	30	---

DRILLING EQUIPMENT & PROCEDURES

RIG TYPE: Mobile B-57, Truck Mounted
BIT TYPE: ---
DRILL MUD: ---
OTHER: Advanced auger through asphalt to 1.0 ft.

ELEVATION:
DATUM:
START: 24 October 1990
FINISH: 24 October 1990
DRILLER: W. Rice
H&A REP: W. Lanik

DEPTH (FT)	CASING BLOWS PER FT	SAMPLER BLOWS PER 6 IN	SAMPLE NUMBER & RECOVERY	SAMPLE DEPTH (FT)	STRATA CHANGE (FT)	VISUAL CLASSIFICATION AND REMARKS
					1.0	-ASPHALT WITH SUB-BASE-
		15 16 21 26	S1 20"/24"	1.0 3.0		Dense brown to black CINDER FRAGMENTS and particles little to trace gravel. -FILL-
		3 2 1 1	S2* 18"/24"	3.0 5.0	3.4	Very loose dark brown ORGANIC SILT, little to trace sand. -LACUSTRINE-
5		2 1 1 3	S3* 24"/24"	5.0 7.0	4.9	Very loose brown to dark brown interbedded laminated SILT and black mottled medium to fine SAND. -LACUSTRINE-
						Bottom of Boring at 7.0 ft.
10						Notes: *1. Sample obtained with 1-3/8 in. ID split spoon. 2. Sample S1 submitted for chemical analysis.
15						
20						
25						

WATER LEVEL DATA

DATE	TIME	ELAPSED TIME (HR)	DEPTH (FT) TO: BOTTOM OF CASING	DEPTH (FT) TO: BOTTOM OF HOLE	DEPTH (FT) TO: WATER

SAMPLE IDENTIFICATION

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon

SUMMARY

OVERBURDEN (LIN FT):	7.0
ROCK CORED (LIN FT):	--
SAMPLES:	3S
BORING NO.	B202

H&A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists	TEST BORING REPORT	BORING NO. B203

PROJECT: ROTH BROS. SMELTING CORPORATION - PHASE II
CLIENT: NIXON HARGRAVE DEVANS & DOYLE
CONTRACTOR: PARRATT-WOLFF, INC.

FILE NO. 70185-42
SHEET NO. 1 OF 1
LOCATION: See Plan

ITEM	CASING	DRIVE SAMPLER	CORE BARREL
TYPE	Auger	SS	---
INSIDE DIAMETER (IN)	4-1/4	1-3/8	---
HAMMER WEIGHT (LB)	---	140	---
HAMMER FALL (IN)	---	30	---

DRILLING EQUIPMENT & PROCEDURES

RIG TYPE: Mobile B-57, Truck Mounted
BIT TYPE: ---
DRILL MUD: ---
OTHER: Advanced auger through asphalt to 1.0 ft.

ELEVATION:
DATUM:
START: 24 October 1990
FINISH: 24 October 1990
DRILLER: W. Rice
H&A REP: W. Lanik

DEPTH (FT)	CASING BLOWS PER FT	SAMPLER BLOWS PER 6 IN	SAMPLE NUMBER & RECOVERY	SAMPLE DEPTH (FT)	STRATA CHANGE (FT)	VISUAL CLASSIFICATION AND REMARKS
						-ASPHALT WITH SUB-BASE-
		8 5 3 2	S1 19"/24"	1.0 3.0	1.5	Medium dense brown sandy coarse to fine GRAVEL, trace wood fragments.
		3 2 2 3	S2 24"/24"	3.0 5.0	3.2	Loose brown silty fine SAND, with layer of black-stained metal cuttings from 1.5 to 1.8 ft., and 3.0 to 3.2 ft. -FILL- Loose red-brown sandy SILT, little gravel. -GLACIAL TILL-
5						Bottom of Boring at 5.0 ft.
10						
15						
20						
25						

WATER LEVEL DATA

DATE	TIME	ELAPSED TIME (HR)	DEPTH (FT) TO: BOTTOM OF CASING	DEPTH (FT) TO: BOTTOM OF HOLE	DEPTH (FT) TO: WATER

SAMPLE IDENTIFICATION

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon

SUMMARY

OVERBURDEN (LIN FT): 5.0
ROCK CORED (LIN FT): --
SAMPLES: 2S
BORING NO. B203

H&A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists	TEST BORING REPORT	BORING NO. B204

PROJECT: ROTH BROS. SMELTING CORPORATION - PHASE II
CLIENT: NIXON HARGRAVE DEVANS & DOYLE
CONTRACTOR: PARRATT-WOLFF, INC.

FILE NO. 70185-42
SHEET NO. 1 OF 1
LOCATION: See Plan

ITEM	CASING	DRIVE SAMPLER	CORE BARREL
TYPE	Auger	SS	---
INSIDE DIAMETER (IN)	4-1/4	1-3/8	---
HAMMER WEIGHT (LB)	---	140	---
HAMMER FALL (IN)	---	30	---

DRILLING EQUIPMENT & PROCEDURES

RIG TYPE: Mobile B-57, Truck Mounted
BIT TYPE: ---
DRILL MUD: ---
OTHER: Advanced auger through asphalt to 1.0 ft.

ELEVATION:
DATUM:
START: 24 October 1990
FINISH: 24 October 1990
DRILLER: W. Rice
H&A REP: W. Lanik

DEPTH (FT)	CASING BLOWS PER FT	SAMPLER BLOWS PER 6 IN	SAMPLE NUMBER & RECOVERY	SAMPLE DEPTH (FT)	STRATA CHANGE (FT)	VISUAL CLASSIFICATION AND REMARKS
					1.0	-ASPHALT WITH SUB-BASE-
		14 11 5 2	S1 18"/24"	1.0 3.0		Medium dense gray-brown coarse to fine SAND, little to trace gravel. -FILL-
		3 2 2 3	S2 24"/24"	3.0 5.0	3.3	Loose brown interbedded laminated SILT and medium to fine SAND. -LACUSTRINE-
5						Bottom of Boring at 5.0 ft.
10						
15						
20						
25						

WATER LEVEL DATA

DATE	TIME	ELAPSED TIME (HR)	DEPTH (FT) TO: BOTTOM OF CASING	DEPTH (FT) TO: BOTTOM OF HOLE	DEPTH (FT) TO: WATER

SAMPLE IDENTIFICATION

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon

SUMMARY

OVERBURDEN (LIN FT): 5.0
ROCK CORED (LIN FT): --
SAMPLES: 2S
BORING NO. B204

H&A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists	TEST BORING REPORT	BORING NO. B205

PROJECT: ROTH BROS. SMELTING CORPORATION - PHASE II
CLIENT: NIXON HARGRAVE DEVANS & DOYLE
CONTRACTOR: PARRATT-WOLFF, INC.

FILE NO. 70185-42
SHEET NO. 1 OF 1
LOCATION: See Plan

ITEM	CASING	DRIVE SAMPLER	CORE BARREL
TYPE	Auger	SS	---
INSIDE DIAMETER (IN)	4-1/4	2-3/8	---
HAMMER WEIGHT (LB)	---	140	---
HAMMER FALL (IN)	---	30	---

DRILLING EQUIPMENT & PROCEDURES

RIG TYPE: Mobile B-57, Truck Mounted
BIT TYPE: ---
DRILL MUD: ---
OTHER: Advanced auger through asphalt to 1.0 ft.

ELEVATION:
DATUM:
START: 24 October 1990
FINISH: 24 October 1990
DRILLER: W. Rice
H&A REP: W. Lanik

DEPTH (FT)	CASING BLOWS PER FT	SAMPLER BLOWS PER 6 IN	SAMPLE NUMBER & RECOVERY	SAMPLE DEPTH (FT)	STRATA CHANGE (FT)	VISUAL CLASSIFICATION AND REMARKS
						-ASPHALT WITH SUB-BASE- Medium dense brown coarse to fine GRAVEL.
		15 15 25	S1 18"/24"	1.0 3.0	1.5	Medium dense sandy coarse to fine GRAVEL. -FILL- Same, except loose, with layer of yellow-brown sandy SILT from 3.8 to 4.1 ft.
		14 4 5	S2* 20"/24"	3.0 5.0	4.1	
5		4 9				Medium dense brown interbedded SILT and, medium to fine SAND, with dark brown organic silt layer. -LACUSTRINE-
						Bottom of Boring at 5.0 ft.
10						Notes: *1. Sample obtained with 1-3/8 in. ID split spoon. 2. Sample S1 submitted for chemical analysis.
15						
20						
25						

WATER LEVEL DATA

DATE	TIME	ELAPSED TIME (HR)	DEPTH (FT) TO: BOTTOM OF CASING	DEPTH (FT) TO: BOTTOM OF HOLE	DEPTH (FT) TO: WATER

SAMPLE IDENTIFICATION

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon

SUMMARY

OVERBURDEN (LIN FT):	5.0
ROCK CORED (LIN FT):	--
SAMPLES:	2S
BORING NO.	B205

H&A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists	TEST BORING REPORT	BORING NO. B206

PROJECT: ROTH BROS. SMELTING CORPORATION - PHASE II
CLIENT: NIXON HARGRAVE DEVANS & DOYLE
CONTRACTOR: PARRATT-WOLFF, INC.

FILE NO. 70185-42
SHEET NO. 1 OF 1
LOCATION: See Plan

ITEM	CASING	DRIVE SAMPLER	CORE BARREL
TYPE	Auger	SS	---
INSIDE DIAMETER (IN)	4-1/4	2-3/8	---
HAMMER WEIGHT (LB)	---	140	---
HAMMER FALL (IN)	---	30	---

DRILLING EQUIPMENT & PROCEDURES

RIG TYPE: Mobile B-57, Truck Mounted
BIT TYPE: ---
DRILL MUD: ---
OTHER: Advanced auger through asphalt to 1.0 ft.

ELEVATION:
DATUM:
START: 24 October 1990
FINISH: 24 October 1990
DRILLER: D. Richmond
H&A REP: W. Lanik

DEPTH (FT)	CASING BLOWS PER FT	SAMPLER BLOWS PER 6 IN	SAMPLE NUMBER & RECOVERY	SAMPLE DEPTH (FT)	STRATA CHANGE (FT)	VISUAL CLASSIFICATION AND REMARKS
						-ASPHALT WITH SUB-BASE-
		12 15 17	S1	1.0	1.5	Medium dense gray-brown coarse sandy GRAVEL.
		13	20"/24"	3.0		Medium dense brown mottled sandy SILT, little gravel, trace cinders, with layer of black-stained metal cuttings from 2.6 to 3.1 ft. -FILL-
		3 2	S2*	3.0	3.1	
5		1 2	12"/24"	5.0		Loose dark brown ORGANIC SILT, with layer of medium sand, wet. -LACUSTRINE-
		2 4 7	S3*	5.0	5.2	Medium dense brown to red brown sandy SILT, little to trace gravel. -GLACIAL TILL-
		8	10"/24"	7.0		Bottom of Boring at 7.0 ft.
10						Notes:
						*1. Sample obtained with 1-3/8 in. ID split spoon.
						2. Sample S1 submitted for chemical analysis.
15						
20						
25						

WATER LEVEL DATA

DATE	TIME	ELAPSED TIME (HR)	DEPTH (FT) TO: BOTTOM OF CASING	BOTTOM OF HOLE	WATER

SAMPLE IDENTIFICATION

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon

SUMMARY

OVERBURDEN (LIN FT):	7.0
ROCK CORED (LIN FT):	---
SAMPLES:	3S
BORING NO.	B206

H&A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists	TEST BORING REPORT	BORING NO. B207

PROJECT: ROTH BROS. SMELTING CORPORATION - PHASE II
CLIENT: NIXON HARGRAVE DEVANS & DOYLE
CONTRACTOR: PARRATT-WOLFF, INC.

FILE NO. 70185-42
SHEET NO. 1 OF 1
LOCATION: See Plan

ITEM	CASING	DRIVE SAMPLER	CORE BARREL
TYPE	Auger	SS	---
INSIDE DIAMETER (IN)	4-1/4	1-3/8	---
HAMMER WEIGHT (LB)	---	140	---
HAMMER FALL (IN)	---	30	---

DRILLING EQUIPMENT & PROCEDURES

RIG TYPE: Mobile B-57, Truck Mounte
BIT TYPE: ---
DRILL MUD: ---
OTHER: Advanced auger through asphalt to 1.0 ft.

ELEVATION:
DATUM:
START: 24 October 1990
FINISH: 24 October 1990
DRILLER: D. Richmond
H&A REP: W. Lanik

DEPTH (FT)	CASING BLOWS PER FT	SAMPLER BLOWS PER 6 IN	SAMPLE NUMBER & RECOVERY	SAMPLE DEPTH (FT)	STRATA CHANGE (FT)	VISUAL CLASSIFICATION AND REMARKS
						-ASHALT WITH SUB-BASE-
		13 9	S1	1.0	1.5	Medium dense brown sandy GRAVEL.
		7 5	15"/24"	3.0	3.0	Medium dense brown to black silty coarse to fine SAND, with cinder and brick particles, and layer of black ash from 1.8 to 2.0 ft. -FILL-
		2 3	S2	3.0		
		2 3	24"/24"	5.0		Loose dark brown to brown mottled SILT, with layer of organic silt. -LACUSTRINE-
5						Bottom of Boring at 5.0 ft.
10						
15						
20						
25						

WATER LEVEL DATA

DATE	TIME	ELAPSED TIME (HR)	DEPTH (FT) TO: BOTTOM OF CASING	BOTTOM OF HOLE	WATER

SAMPLE IDENTIFICATION

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon

SUMMARY

OVERBURDEN (LIN FT): 5.0
ROCK CORED (LIN FT): --
SAMPLES: 2S
BORING NO. B207

H&A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists	TEST BORING REPORT	BORING NO. B208

PROJECT: ROTH BROS. SMELTING CORPORATION - PHASE II
CLIENT: NIXON HARGRAVE DEVANS & DOYLE
CONTRACTOR: PARRATT-WOLFF, INC.

FILE NO. 70185-42
SHEET NO. 1 OF 1
LOCATION: See Plan

ITEM	CASING	DRIVE SAMPLER	CORE BARREL
TYPE	Auger	SS	---
INSIDE DIAMETER (IN)	4-1/4	1-3/8	---
HAMMER WEIGHT (LB)	---	140	---
HAMMER FALL (IN)	---	30	---

DRILLING EQUIPMENT & PROCEDURES

RIG TYPE: Mobile B-57, Truck Mounted
BIT TYPE: ---
DRILL MUD: ---
OTHER: Advanced auger through asphalt to 1.0 ft.

ELEVATION:
DATUM:
START: 24 October 1990
FINISH: 24 October 1990
DRILLER: D. Richmond
H&A REP: W. Lanik

DEPTH (FT)	CASING BLOWS PER FT	SAMPLER BLOWS PER 6 IN	SAMPLE NUMBER & RECOVERY	SAMPLE DEPTH (FT)	STRATA CHANGE (FT)	VISUAL CLASSIFICATION AND REMARKS
						-ASPHALT WITH SUB-BASE- Medium dense brown sandy coarse to fine GRAVEL.
		9 3 3 4	S1 21"/24"	1.0 3.0	1.9	Loose gray-brown coarse to fine sandy SILT, layer of dark brown organic silt. -LACUSTRINE-
		3 2 4 5	S2 18"/24"	3.0 5.0	3.5	Loose light brown interbedded laminated SILT and coarse to medium SAND. -LACUSTRINE-
5						Bottom of Boring at 5.0 ft.
10						
15						
20						
25						

WATER LEVEL DATA

DATE	TIME	ELAPSED TIME (HR)	DEPTH (FT) TO: BOTTOM OF CASING	DEPTH (FT) TO: BOTTOM OF HOLE	DEPTH (FT) TO: WATER

SAMPLE IDENTIFICATION

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon

SUMMARY

OVERBURDEN (LIN FT):	5.0
ROCK CORED (LIN FT):	--
SAMPLES:	2S
BORING NO.	B208

H&A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists	TEST BORING REPORT	BORING NO. B209

PROJECT: ROTH BROS. SMELTING CORPORATION - PHASE II
CLIENT: NIXON HARGRAVE DEVANS & DOYLE
CONTRACTOR: PARRATT-WOLFF, INC.

FILE NO. 70185-42
SHEET NO. 1 OF 1
LOCATION: See Plan
ELEVATION:
DATUM:
START: 24 October 1990
FINISH: 24 October 1990
DRILLER: D. Richmond
H&A REP: W. Lanik

ITEM	CASING	DRIVE SAMPLER	CORE BARREL
TYPE	Auger	SS	---
INSIDE DIAMETER (IN)	4-1/4	2-3/8	---
HAMMER WEIGHT (LB)	---	140	---
HAMMER FALL (IN)	---	30	---

DRILLING EQUIPMENT & PROCEDURES

RIG TYPE: Mobile B-57, Truck Mounted
BIT TYPE: ---
DRILL MUD: ---
OTHER: Advanced auger through asphalt to 1.0 ft.

DEPTH (FT)	CASING BLOWS PER FT	SAMPLER BLOWS PER 6 IN	SAMPLE NUMBER & RECOVERY	SAMPLE DEPTH (FT)	STRATA CHANGE (FT)	VISUAL CLASSIFICATION AND REMARKS
					1.0	-ASPHALT WITH SUB-BASE-
		17 25 29 12	S1 14"/24"	1.0 3.0		Medium dense dark brown gravelly coarse to fine SAND, trace cinder fragments and particles. Medium dense gray-brown sandy SILT. -FILL-
		4 3 3 3	S2* 24"/24"	3.0 5.0	3.5	Loose brown coarse to fine SAND, with occasional layer of silt. -LACUSTRINE-
5						Bottom of Boring at 5.0 ft.
10						
15						
20						
25						

Notes:

*1. Sample obtained with 1-3/8 in. split spoon.

2. Sample S1 submitted for chemical analysis.

WATER LEVEL DATA

DATE	TIME	ELAPSED TIME (HR)	DEPTH (FT) TO: BOTTOM OF CASING	BOTTOM OF HOLE	WATER
10/24/90	1545	0.25	---	5.5	2.9

SAMPLE IDENTIFICATION

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon

SUMMARY

OVERBURDEN (LIN FT): 5.0
ROCK CORED (LIN FT): --
SAMPLES: 2S
BORING NO. B209

H&A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists	TEST BORING REPORT	BORING NO. B210

PROJECT: ROTH BROS. SMELTING CORPORATION - PHASE II
CLIENT: NIXON HARGRAVE DEVANS & DOYLE
CONTRACTOR: PARRATT-WOLFF, INC.

FILE NO. 70185-42
SHEET NO. 1 OF 1
LOCATION: See Plan

ITEM	CASING	DRIVE SAMPLER	CORE BARREL
TYPE	Auger	SS	---
INSIDE DIAMETER (IN)	4-1/4	2-3/8	---
HAMMER WEIGHT (LB)	---	140	---
HAMMER FALL (IN)	---	30	---

DRILLING EQUIPMENT & PROCEDURES

RIG TYPE: Mobile B-57, Truck Mounted
BIT TYPE: ---
DRILL MUD: ---
OTHER: Advanced auger through asphalt to 1.5 ft.

ELEVATION:
DATUM:
START: 24 October 1990
FINISH: 24 October 1990
DRILLER: D. Richmond
H&A REP: W. Lanik

DEPTH (FT)	CASING BLOWS PER FT	SAMPLER BLOWS PER 6 IN	SAMPLE NUMBER & RECOVERY	SAMPLE DEPTH (FT)	STRATA CHANGE (FT)	VISUAL CLASSIFICATION AND REMARKS
					1.0	-ASPHALT WITH SUB-BASE-
		7 9 11	S1 24"/24"	1.5 3.5		Medium dense brown to dark brown sandy SILT, little gravel, trace cinder fragments. -FILL-
		5 2 2	S2* 14"/24"	3.5 5.5	3.0	Loose dark brown to black mottled ORGANIC SILT. Same. -LACUSTRINE-
5		2 1 1	S3* 24"/24"	5.5 7.5		Same, except very loose, with layer of light brown laminated fine sandy SILT. -LACUSTRINE-
		WOH WOH				Bottom of Boring at 7.5 ft.
10						Notes: *1. Sample obtained with 1-3/8 in. ID split spoon. 2. Sample S1 submitted for chemical analysis.
15						
20						
25						

WATER LEVEL DATA

DATE	TIME	ELAPSED TIME (HR)	DEPTH (FT) TO: BOTTOM OF CASING	BOTTOM OF HOLE	WATER

SAMPLE IDENTIFICATION

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon

SUMMARY

OVERBURDEN (LIN FT): 7.5
ROCK CORED (LIN FT): --
SAMPLES: 3S
BORING NO. B210

H&A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists	TEST BORING REPORT	BORING NO. B211

PROJECT: ROTH BROS. SMELTING CORPORATION - PHASE II
CLIENT: NIXON HARGRAVE DEVANS & DOYLE
CONTRACTOR: PARRATT-WOLFF, INC.

FILE NO. 70185-42
SHEET NO. 1 OF 1
LOCATION: See Plan

ITEM	CASING	DRIVE SAMPLER	CORE BARREL
TYPE	Auger	SS	---
INSIDE DIAMETER (IN)	4-1/4	1-3/8	---
HAMMER WEIGHT (LB)	---	140	---
HAMMER FALL (IN)	---	30	---

DRILLING EQUIPMENT & PROCEDURES

RIG TYPE: Mobile B-57, Truck Mounted
BIT TYPE: ---
DRILL MUD: ---
OTHER: Advanced auger through asphalt to 1.0 ft.

ELEVATION:
DATUM:
START: 25 October 1990
FINISH: 25 October 1990
DRILLER: D. Richmond
H&A REP: W. Lanik

DEPTH (FT)	CASING BLOWS PER FT	SAMPLER BLOWS PER 6 IN	SAMPLE NUMBER & RECOVERY	SAMPLE DEPTH (FT)	STRATA CHANGE (FT)	VISUAL CLASSIFICATION AND REMARKS
					1.0	-ASPHALT WITH SUB-BASE-
		9 15 6 4	S1 18"/24"	1.0 3.0	2.0	Medium dense gray-brown gravelly coarse to medium SAND, with layer of black-stained metal cuttings from 1.9 to 2.0 ft. -FILL-
		4 4 5 5	S2 14"/24"	3.0 5.0	3.2	Medium stiff brown and black mottled ORGANIC SILT. -LACUSTRINE-
5						Loose brown medium SAND, with occasional layer of silty fine sand. -LACUSTRINE-
						Bottom of Boring at 5.0 ft.
10						
15						
20						
25						

WATER LEVEL DATA

DATE	TIME	ELAPSED TIME (HR)	DEPTH (FT) TO: BOTTOM OF CASING	DEPTH (FT) TO: BOTTOM OF HOLE	DEPTH (FT) TO: WATER

SAMPLE IDENTIFICATION

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon

SUMMARY

OVERBURDEN (LIN FT): 5.0
ROCK CORED (LIN FT): --
SAMPLES: 2S
BORING NO. B211

H&A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists	TEST BORING REPORT	BORING NO. B212

PROJECT: ROTH BROS. SMELTING CORPORATION - PHASE II
CLIENT: NIXON HARGRAVE DEVANS & DOYLE
CONTRACTOR: PARRATT-WOLFF, INC.

FILE NO. 70185-42
SHEET NO. 1 OF 1
LOCATION: See Plan

ITEM	CASING	DRIVE SAMPLER	CORE BARREL
TYPE	Auger	SS	---
INSIDE DIAMETER (IN)	4-1/4	1-3/8	---
HAMMER WEIGHT (LB)	---	140	---
HAMMER FALL (IN)	---	30	---

DRILLING EQUIPMENT & PROCEDURES

RIG TYPE: Mobile B-57, Truck Mounted
BIT TYPE: ---
DRILL MUD: ---
OTHER: Advanced auger through asphalt to 1.0 ft.

ELEVATION:
DATUM:
START: 25 October 1990
FINISH: 25 October 1990
DRILLER: D. Richmond
H&A REP: W. Lanik

DEPTH (FT)	CASING BLOWS PER FT	SAMPLER BLOWS PER 6 IN	SAMPLE NUMBER & RECOVERY	SAMPLE DEPTH (FT)	STRATA CHANGE (FT)	VISUAL CLASSIFICATION AND REMARKS
					1.0	-ASPHALT WITH SUB-BASE-
		20 27 55 51	S1 10"/24"	1.0 3.0		Dense brown sandy GRAVEL, wet. -FILL-
		24 4 4 5	S2* 24"/24"	3.0 5.0	3.1 4.1	Medium dense brown mottled coarse to fine SAND, little to trace fine gravel. -LACUSTRINE-
5						Loose red-brown sandy SILT, little to trace fine gravel. -GLACIAL TILL-
						Bottom of Boring at 5.0 ft.
10						Notes: *1. Sample obtained with 1-3/8 in. ID split spoon. 2. Sample S1 submitted for chemical analysis.
15						
20						
25						

WATER LEVEL DATA

DATE	TIME	ELAPSED TIME (HR)	DEPTH (FT) TO: BOTTOM OF CASING	DEPTH (FT) TO: BOTTOM OF HOLE	DEPTH (FT) TO: WATER

SAMPLE IDENTIFICATION

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon

SUMMARY

OVERBURDEN (LIN FT):	5.0
ROCK CORED (LIN FT):	--
SAMPLES:	2S
BORING NO.	B212

H&A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists	TEST BORING REPORT	BORING NO. B213

PROJECT: ROTH BROS. SMELTING CORPORATION - PHASE II
CLIENT: NIXON HARGRAVE DEVANS & DOYLE
CONTRACTOR: PARRATT-WOLFF, INC.

FILE NO. 70185-42
SHEET NO. 1 OF 1
LOCATION: See Plan

ITEM	CASING	DRIVE SAMPLER	CORE BARREL
TYPE	Auger	SS	---
INSIDE DIAMETER (IN)	4-1/4	2-3/8	---
HAMMER WEIGHT (LB)	---	140	---
HAMMER FALL (IN)	---	30	---

DRILLING EQUIPMENT & PROCEDURES

RIG TYPE: Mobile B-57, Truck Mounted
BIT TYPE: ---
DRILL MUD: ---
OTHER: Advanced auger through asphalt to 1.0 ft.

ELEVATION:
DATUM:
START: 25 October 1990
FINISH: 25 October 1990
DRILLER: D. Richmond
H&A REP: W. Lanik

DEPTH (FT)	CASING BLOWS PER FT	SAMPLER BLOWS PER 6 IN	SAMPLE NUMBER & RECOVERY	SAMPLE DEPTH (FT)	STRATA CHANGE (FT)	VISUAL CLASSIFICATION AND REMARKS
					1.0	-ASPHALT WITH SUB-BASE-
		22 16 16 9	S1 18"/24"	1.0 3.0	2.5	Medium dense gray-brown gravelly coarse to fine SAND, trace cinder particles, trace wood. -FILL-
		3 3 4 3	NR	3.0 5.0	5.1	Loose dark brown ORGANIC SILT. No Recovery. -LACUSTRINE-
5		4 3 6 8	S3* 24"/24"	5.0 7.0		Loose brown mottled coarse to fine SAND, little silt, wet. -LACUSTRINE-
						Bottom of Boring at 7.0 ft.
10						Notes: *1. Sample obtained with 1-3/8 in. ID split spoon. 2. Sample S1 submitted for chemical analysis.
15						
20						
25						

WATER LEVEL DATA

DATE	TIME	ELAPSED TIME (HR)	DEPTH (FT) TO: BOTTOM OF CASING	DEPTH (FT) TO: BOTTOM OF HOLE	DEPTH (FT) TO: WATER

SAMPLE IDENTIFICATION

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon

SUMMARY

OVERBURDEN (LIN FT): 7.0
ROCK CORED (LIN FT): --
SAMPLES: 3S
BORING NO. B213

H&A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists	TEST BORING REPORT	BORING NO. B214

PROJECT: ROTH BROS. SMELTING CORPORATION - PHASE II
CLIENT: NIXON HARGRAVE DEVANS & DOYLE
CONTRACTOR: PARRATT-WOLFF, INC.

FILE NO. 70185-42
SHEET NO. 1 OF 1
LOCATION: See Plan

ITEM	CASING	DRIVE SAMPLER	CORE BARREL
TYPE	Auger	SS	---
INSIDE DIAMETER (IN)	4-1/4	2-3/8	---
HAMMER WEIGHT (LB)	---	140	---
HAMMER FALL (IN)	---	30	---

DRILLING EQUIPMENT & PROCEDURES

RIG TYPE: Mobile B-57, Truck Mounted
BIT TYPE: ---
DRILL MUD: ---
OTHER: Advanced auger through asphalt to 1.0 ft.

ELEVATION:
DATUM:
START: 25 October 1990
FINISH: 25 October 1990
DRILLER: D. Richmond
H&A REP: W. Lanik

DEPTH (FT)	CASING BLOWS PER FT	SAMPLER BLOWS PER 6 IN	SAMPLE NUMBER & RECOVERY	SAMPLE DEPTH (FT)	STRATA CHANGE (FT)	VISUAL CLASSIFICATION AND REMARKS
					1.0	-ASPHALT WITH SUB-BASE-
		6 5 5 5	S1 24"/24"	1.0 3.0	2.8	Loose light brown to brown mottled sandy SILT, trace gravel, with cinder fragments and particles, and metal pieces. -FILL-
		2 2 2 2	S2* 24"/24"	3.0 5.0		Soft light brown mottled SILT, trace organics. -LACUSTRINE-
5						Bottom of Boring at 5.0 ft.
10						
15						
20						
25						

Notes:

*1. Sample obtained with 1-3/8 in. ID. split spoon.

2. Sample S1 submitted for chemical analysis.

WATER LEVEL DATA

DATE	TIME	ELAPSED TIME (HR)	DEPTH (FT) TO: BOTTOM OF CASING	DEPTH (FT) TO: BOTTOM OF HOLE	DEPTH (FT) TO: WATER

SAMPLE IDENTIFICATION

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon

SUMMARY

OVERBURDEN (LIN FT):	5.0
ROCK CORED (LIN FT):	--
SAMPLES:	2S
BORING NO.	B214

H&A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists	TEST BORING REPORT	BORING NO. B215

PROJECT: ROTH BROS. SMELTING CORPORATION - PHASE II
CLIENT: NIXON HARGRAVE DEVANS & DOYLE
CONTRACTOR: PARRATT-WOLFF, INC.

FILE NO. 70185-42
SHEET NO. 1 OF 1
LOCATION: See Plan

ITEM	CASING	DRIVE SAMPLER	CORE BARREL
TYPE	Auger	SS	---
INSIDE DIAMETER (IN)	4-1/4	2-3/8	---
HAMMER WEIGHT (LB)	---	140	---
HAMMER FALL (IN)	---	30	---

DRILLING EQUIPMENT & PROCEDURES

RIG TYPE: Mobile B-57, Truck Mounted
BIT TYPE: ---
DRILL MUD: ---
OTHER: Advanced auger through asphalt to 1.0 ft.

ELEVATION:
DATUM:
START: 25 October 1990
FINISH: 25 October 1990
DRILLER: D. Richmond
H&A REP: W. Lanik

DEPTH (FT)	CASING BLOWS PER FT	SAMPLER BLOWS PER 6 IN	SAMPLE NUMBER & RECOVERY	SAMPLE DEPTH (FT)	STRATA CHANGE (FT)	VISUAL CLASSIFICATION AND REMARKS
					1.0	-ASPHALT WITH SUB-BASE-
		21 19 15 12	S1 20"/24"	1.0 3.0	2.8	Medium dense dark brown gravelly coarse to fine SAND, trace cinders, with layer of black-stained cinder particles from 1.6 to 1.8 ft. -FILL-
		10 8 6 6	S2* 24"/24"	3.0 5.0		Stiff gray-brown to light brown mottled SILT, with layer of organic silt. -LACUSTRINE-
5						Bottom of Boring at 5.0 ft.
10						Notes: *1. Sample obtained with 1-3/8 in. ID split spoon. 2. Sample S1 submitted for chemical analysis.
15						
20						
25						

WATER LEVEL DATA					
DATE	TIME	ELAPSED TIME (HR)	DEPTH (FT) TO: BOTTOM OF CASING	BOTTOM OF HOLE	WATER

SAMPLE IDENTIFICATION

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon

SUMMARY

OVERBURDEN (LIN FT):	5.0
ROCK CORED (LIN FT):	--
SAMPLES:	2S
BORING NO.	B215

H&A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists	TEST BORING REPORT	BORING NO. B216

PROJECT: ROTH BROS. SMELTING CORPORATION - PHASE II
CLIENT: NIXON HARGRAVE DEVANS & DOYLE
CONTRACTOR: PARRATT-WOLFF, INC.

FILE NO. 70185-42
SHEET NO. 1 OF 1
LOCATION: See Plan

ITEM	CASING	DRIVE SAMPLER	CORE BARREL
TYPE	Auger	SS	---
INSIDE DIAMETER (IN)	4-1/4	2-3/8	---
HAMMER WEIGHT (LB)	---	140	---
HAMMER FALL (IN)	---	30	---

DRILLING EQUIPMENT & PROCEDURES

RIG TYPE: Mobile B-57, Truck Mounted
BIT TYPE: ---
DRILL MUD: ---
OTHER: Advanced auger through asphalt to 1.0 ft.

ELEVATION:
DATUM:
START: 25 October 1990
FINISH: 25 October 1990
DRILLER: D. Richmond
H&A REP: W. Lanik

DEPTH (FT)	CASING BLOWS PER FT	SAMPLER BLOWS PER 6 IN	SAMPLE NUMBER & RECOVERY	SAMPLE DEPTH (FT)	STRATA CHANGE (FT)	VISUAL CLASSIFICATION AND REMARKS
					1.0	-ASPHALT WITH SUB-BASE-
		29 26 19 17	S1 20"/24"	1.0 3.0		Medium dense dark-brown to brown mottled gravelly medium to fine SAND, with concrete pieces and wood fragmets. -FILL-
		8 7 4 6	S2* 24"/24"	3.0 5.0	3.0	Medium dense brown mottled fine SAND, with organic layer from 3.0 to 3.5 ft. -LACUSTRINE-
5						Bottom of Boring at 5.0 ft.
10						Notes: *1. Sample obtained with 1-3/8 in. ID split spoon. 2. Sample S1 submitted for chemical analysis.
15						
20						
25						

WATER LEVEL DATA

DATE	TIME	ELAPSED TIME (HR)	DEPTH (FT) TO: BOTTOM OF CASING	BOTTOM OF HOLE	WATER

SAMPLE IDENTIFICATION

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon

SUMMARY

OVERBURDEN (LIN FT): 5.0
ROCK CORED (LIN FT): --
SAMPLES: 2S
BORING NO. B216

H&A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists	TEST BORING REPORT	BORING NO. B217

PROJECT: ROTH BROS. SMELTING CORPORATION - PHASE II
CLIENT: NIXON HARGRAVE DEVANS & DOYLE
CONTRACTOR: PARRATT-WOLFF, INC.

FILE NO. 70185-42
SHEET NO. 1 OF 1
LOCATION: See Plan

ITEM	CASING	DRIVE SAMPLER	CORE BARREL
TYPE	Auger	SS	---
INSIDE DIAMETER (IN)	4-1/4	2-3/8	---
HAMMER WEIGHT (LB)	---	140	---
HAMMER FALL (IN)	---	30	---

DRILLING EQUIPMENT & PROCEDURES

RIG TYPE: Mobile B-57, Truck Mounted
BIT TYPE: ---
DRILL MUD: ---
OTHER: Advanced auger through asphalt to 1.0 ft.

ELEVATION:
DATUM:
START: 25 October 1990
FINISH: 25 October 1990
DRILLER: D. Richmond
H&A REP: W. Lanik

DEPTH (FT)	CASING BLOWS PER FT	SAMPLER BLOWS PER 6 IN	SAMPLE NUMBER & RECOVERY	SAMPLE DEPTH (FT)	STRATA CHANGE (FT)	VISUAL CLASSIFICATION AND REMARKS
					1.0	-ASPHALT WITH SUB-BASE-
		4 14 10	S1 18"/24"	1.0 3.0	2.5	Medium dense dark brown to brown mottled coarse to fine SAND, little gravel, with wood and cinder fragments. -FILL-
		9 8 9	S2*	3.0	3.0	Medium dense dark brown fine SAND, little organics, trace coarse to medium sand. -LACUSTRINE-
5		6 9	10"/24"	5.0		Medium dense red-brown to light brown mottled sandy SILT, trace gravel. -GLACIAL TILL-
						Bottom of Boring at 5.0 ft.

Notes:

*1. Sample obtained with 1-3/8 in. ID split spoon.

2. Sample S1 submitted for chemical analysis.

WATER LEVEL DATA					
DATE	TIME	ELAPSED TIME (HR)	DEPTH (FT) TO: BOTTOM OF CASING	DEPTH (FT) TO: BOTTOM OF HOLE	DEPTH (FT) TO: WATER

SAMPLE IDENTIFICATION

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon

SUMMARY

OVERBURDEN (LIN FT):	5.0
ROCK CORED (LIN FT):	--
SAMPLES:	2S
BORING NO.	B217

H&A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists	TEST BORING REPORT	BORING NO. B218

PROJECT: ROTH BROS. SMELTING CORPORATION - PHASE II
CLIENT: NIXON HARGRAVE DEVANS & DOYLE
CONTRACTOR: PARRATT-WOLFF, INC.

FILE NO. 70185-42
SHEET NO. 1 OF 1
LOCATION: See Plan

ITEM	CASING	DRIVE SAMPLER	CORE BARREL
TYPE	Auger	SS	---
INSIDE DIAMETER (IN)	4-1/4	2-3/8	---
HAMMER WEIGHT (LB)	---	140	---
HAMMER FALL (IN)	---	30	---

DRILLING EQUIPMENT & PROCEDURES

RIG TYPE: Mobile B-57, Truck Mounted
BIT TYPE: ---
DRILL MUD: ---
OTHER: Advanced auger through concrete to 1.0 ft.

ELEVATION:
DATUM:
START: 25 October 1990
FINISH: 25 October 1990
DRILLER: D. Richmond
H&A REP: W. Lanik

DEPTH (FT)	CASING BLOWS PER FT	SAMPLER BLOWS PER 6 IN	SAMPLE NUMBER & RECOVERY	SAMPLE DEPTH (FT)	STRATA CHANGE (FT)	VISUAL CLASSIFICATION AND REMARKS
					0.7	-CONCRETE PAD-
		25 30 32 23	S1 24"/24"	1.0 3.0		Dense red-brown to dark brown sandy SILT, little gravel, with wood fragments. -FILL- Same.
		7 3 2 4	S2* 24"/24"	3.0 5.0	3.5	Loose light brown mottled fine SAND, with layer of dark-brown fine sand little organics from 3.5 to 4.0 ft. -LACUSTRINE-
5						Bottom of Boring at 5.0 ft.
10						Notes: *1. Sample obtained with 1-3/8 in. ID split spoon. 2. Sample S1 submitted for chemical analysis.
15						
20						
25						

WATER LEVEL DATA

DATE	TIME	ELAPSED TIME (HR)	DEPTH (FT) TO: BOTTOM OF CASING	DEPTH (FT) TO: BOTTOM OF HOLE	DEPTH (FT) TO: WATER

SAMPLE IDENTIFICATION

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon

SUMMARY

OVERBURDEN (LIN FT):	5.0
ROCK CORED (LIN FT):	--
SAMPLES:	2S
BORING NO.	B218

H&A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists	TEST BORING REPORT	BORING NO. B219

PROJECT: ROTH BROS. SMELTING CORPORATION - PHASE II
CLIENT: NIXON HARGRAVE DEVANS & DOYLE
CONTRACTOR: PARRATT-WOLFF, INC.

FILE NO. 70185-42
SHEET NO. 1 OF 1
LOCATION: See Plan

ITEM	CASING	DRIVE SAMPLER	CORE BARREL
TYPE	Auger	SS	---
INSIDE DIAMETER (IN)	4-1/4	2-3/8	---
HAMMER WEIGHT (LB)	---	140	---
HAMMER FALL (IN)	---	30	---

DRILLING EQUIPMENT & PROCEDURES

RIG TYPE: Mobile B-57, Truck Mounted
BIT TYPE: ---
DRILL MUD: ---
OTHER: Advanced auger through asphalt to 1.0 ft.

ELEVATION:
DATUM:
START: 25 October 1990
FINISH: 25 October 1990
DRILLER: D. Richmond
H&A REP: W. Lanik

DEPTH (FT)	CASING BLOWS PER FT	SAMPLER BLOWS PER 6 IN	SAMPLE NUMBER & RECOVERY	SAMPLE DEPTH (FT)	STRATA CHANGE (FT)	VISUAL CLASSIFICATION AND REMARKS
					0.5	-ASPHALT-
		3 3 4 6	S1 14"/24"	1.0 3.0	2.0	Very dense dark brown to black CINDER PARTICLES AND FRAGMENTS. -FILL-
		4 3 4 6	S2* 24"/24"	3.0 5.0	3.0	Medium stiff brown and black mottled, ORGANIC SILT. -LACUSTRINE-
5						Loose light brown laminated silty fine SAND, with occasional layer of medium sand. -LACUSTRINE-
						Bottom of Boring at 5.0 ft.
10						
15						
20						
25						

Notes:

*1. Sample obtained with 1-3/8 in. ID split spoon.

2. Sample S1 submitted for chemical analysis.

WATER LEVEL DATA

DATE	TIME	ELAPSED TIME (HR)	DEPTH (FT) TO: BOTTOM OF CASING	DEPTH (FT) TO: BOTTOM OF HOLE	DEPTH (FT) TO: WATER

SAMPLE IDENTIFICATION

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon

SUMMARY

OVERBURDEN (LIN FT):	5.0
ROCK CORED (LIN FT):	--
SAMPLES:	2S
BORING NO.	B219

H&A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists	TEST BORING REPORT	BORING NO. B220

PROJECT: ROTH BROS. SMELTING CORPORATION - PHASE II
CLIENT: NIXON HARGRAVE DEVANS & DOYLE
CONTRACTOR: PARRATT-WOLFF, INC.

FILE NO. 70185-42
SHEET NO. 1 OF 1
LOCATION: See Plan

ITEM	CASING	DRIVE SAMPLER	CORE BARREL
TYPE	Auger	SS	---
INSIDE DIAMETER (IN)	4-1/4	2-3/8	---
HAMMER WEIGHT (LB)	---	140	---
HAMMER FALL (IN)	---	30	---

DRILLING EQUIPMENT & PROCEDURES

RIG TYPE: Mobile B-57, Truck Mounted
BIT TYPE: ---
DRILL MUD: ---
OTHER: Advanced auger through asphalt to 1.0 ft.

ELEVATION:
DATUM:
START: 25 October 1990
FINISH: 25 October 1990
DRILLER: D. Richmond
H&A REP: W. Lanik

DEPTH (FT)	CASING BLOWS PER FT	SAMPLER BLOWS PER 6 IN	SAMPLE NUMBER & RECOVERY	SAMPLE DEPTH (FT)	STRATA CHANGE (FT)	VISUAL CLASSIFICATION AND REMARKS
					1.0	-ASPHALT WITH SUB-BASE-
		23 13 11 10	S1 20"/24"	1.0 3.0	2.7	Medim dense dark brown to black CINDER FRAGMENTS and ASH, trace gravel, oily odor. -FILL-
		2 3 5 6	S2* 24"/24"	3.0 5.0		Loose brown mottled coarse to medium SAND, with occasional seams of silty fine sand, and layer of dark brown silty fine sand, little organics. -LACUSTRINE-
5						Bottom of Boring at 5.0 ft.
10						
15						
20						
25						

Notes:

*1. Sample obtained with 1-3/8 in. split spoon.

2. Sample S1 submitted for chemical analysis.

WATER LEVEL DATA					
DATE	TIME	ELAPSED TIME (HR)	DEPTH (FT) TO: BOTTOM OF CASING	DEPTH (FT) TO: BOTTOM OF HOLE	DEPTH (FT) TO: WATER

SAMPLE IDENTIFICATION

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon

SUMMARY

OVERBURDEN (LIN FT): 5.0
ROCK CORED (LIN FT): --
SAMPLES: 2S
BORING NO. B220

H&A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists	TEST BORING REPORT	BORING NO. B221

PROJECT: ROTH BROS. SMELTING CORPORATION - PHASE II
CLIENT: NIXON HARGRAVE DEVANS & DOYLE
CONTRACTOR: PARRATT-WOLFF, INC.

FILE NO. 70185-42
SHEET NO. 1 OF 1
LOCATION: See Plan

ITEM	CASING	DRIVE SAMPLER	CORE BARREL
TYPE	Auger	SS	---
INSIDE DIAMETER (IN)	4-1/4	2-3/8	---
HAMMER WEIGHT (LB)	---	140	---
HAMMER FALL (IN)	---	30	---

DRILLING EQUIPMENT & PROCEDURES

RIG TYPE: Mobile B-57, Truck Mounted
BIT TYPE: ---
DRILL MUD: ---
OTHER: Advanced auger through asphalt to 1.0 ft.

ELEVATION:
DATUM:
START: 25 October 1990
FINISH: 25 October 1990
DRILLER: D. Richmond
H&A REP: W. Lanik

DEPTH (FT)	CASING BLOWS PER FT	SAMPLER BLOWS PER 6 IN	SAMPLE NUMBER & RECOVERY	SAMPLE DEPTH (FT)	STRATA CHANGE (FT)	VISUAL CLASSIFICATION AND REMARKS
					1.0	-ASPHALT WITH SUB-BASE-
		4 7	S1	1.0		Loose dark brown sandy GRAVEL, trace cinders. -FILL-
		4 7	16"/24"	3.0	2.3 3.0	Medium dense dark brown ORGANIC SILT.
		5 6	S2*	3.0		Medium dense light brown laminated fine SAND, with frequent seams of silt. -LACUSTRINE-
5		6 7	24"/24"	5.0	4.5	Medium dense red-brown sandy SILT, trace fine gravel. -GLACIAL TILL-
						Bottom of Boring at 5.0 ft.
10						Notes: *1. Sample obtained with 1-3/8 in. ID split spoon. 3. Sample S1 submitted for chemical analysis.
15						
20						
25						

WATER LEVEL DATA					
DATE	TIME	ELAPSED TIME (HR)	DEPTH (FT) TO: BOTTOM OF CASING	DEPTH (FT) TO: BOTTOM OF HOLE	DEPTH (FT) TO: WATER

SAMPLE IDENTIFICATION

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon

SUMMARY

OVERBURDEN (LIN FT): 5.0
ROCK CORED (LIN FT): --
SAMPLES: 2S
BORING NO. B221

H&A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists	TEST BORING REPORT	BORING NO. B222

PROJECT: ROTH BROS. SMELTING CORPORATION - PHASE II
CLIENT: NIXON HARGRAVE DEVANS & DOYLE
CONTRACTOR: PARRATT-WOLFF, INC.

FILE NO. 70185-42
SHEET NO. 1 OF 1
LOCATION: See Plan

ITEM	CASING	DRIVE SAMPLER	CORE BARREL
TYPE	Auger	SS	---
INSIDE DIAMETER (IN)	4-1/4	1-3/8	---
HAMMER WEIGHT (LB)	---	140	---
HAMMER FALL (IN)	---	30	---

DRILLING EQUIPMENT & PROCEDURES

RIG TYPE: Mobile B-57, Truck Mounted
BIT TYPE: ---
DRILL MUD: ---
OTHER: Advanced auger through asphalt to 0.5 ft.

ELEVATION:
DATUM:
START: 25 October 1990
FINISH: 25 October 1990
DRILLER: D. Richmond
H&A REP: W. Lanik

DEPTH (FT)	CASING BLOWS PER FT	SAMPLER BLOWS PER 6 IN	SAMPLE NUMBER & RECOVERY	SAMPLE DEPTH (FT)	STRATA CHANGE (FT)	VISUAL CLASSIFICATION AND REMARKS
					0.5	-ASPHALT-
		5 7 7 7	S1 24"/24"	0.5 2.5	2.1	Medium dense dark brown to brown mottled SILT, with wood fragments, and layer of cinders from 1.8 to 1.9 ft. -FILL-
		5 3 2 2	S2 24"/24"	2.5 4.5		Medium stiff dark brown to gray-brown mottled sandy SILT, trace organics. -LACUSTRINE-
5						Bottom of Boring at 4.5 ft.
10						
15						
20						
25						

WATER LEVEL DATA

DATE	TIME	ELAPSED TIME (HR)	DEPTH (FT) TO: BOTTOM OF CASING	DEPTH (FT) TO: BOTTOM OF HOLE	DEPTH (FT) TO: WATER

SAMPLE IDENTIFICATION

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon

SUMMARY

OVERBURDEN (LIN FT): 4.5
ROCK CORED (LIN FT): --
SAMPLES: 2S

BORING NO. B222

H&A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists	TEST BORING REPORT	BORING NO. B223

PROJECT: ROTH BROS. SMELTING CORPORATION - PHASE II
CLIENT: NIXON HARGRAVE DEVANS & DOYLE
CONTRACTOR: PARRATT-WOLFF, INC.

FILE NO. 70185-42
SHEET NO. 1 OF 1
LOCATION: See Plan

ITEM	CASING	DRIVE SAMPLER	CORE BARREL
TYPE	Auger	SS	---
INSIDE DIAMETER (IN)	4-1/4	2-3/8	---
HAMMER WEIGHT (LB)	---	140	---
HAMMER FALL (IN)	---	30	---

DRILLING EQUIPMENT & PROCEDURES

RIG TYPE: Mobile B-57, Truck Mounted
BIT TYPE: ---
DRILL MUD: ---
OTHER: Advanced auger through asphalt to 1.0 ft.

ELEVATION:
DATUM:
START: 25 October 1990
FINISH: 25 October 1990
DRILLER: D. Richmond
H&A REP: W. Lanik

DEPTH (FT)	CASING BLOWS PER FT	SAMPLER BLOWS PER 6 IN	SAMPLE NUMBER & RECOVERY	SAMPLE DEPTH (FT)	STRATA CHANGE (FT)	VISUAL CLASSIFICATION AND REMARKS
					0.7	-CONCRETE PAD-
		20 19 10	S1 24"/24"	1.0 3.0	2.7	Medium dense dark brown to black GRAVEL, with cinder fragments and particles. -FILL-
		8 4 2	S2* 14"/24"	3.0 5.0		Loose light brown mottled coarse to fine SAND, with occasional silt seams and layers, and with layer of silt, little organics. -LACUSTRINE-
5		3 2				Bottom of Boring at 5.0 ft.
10						Notes: *1. Sample obtained with 1-/38 in. split spoon. 2. Sample S1 submitted for chemical analysis.
15						
20						
25						

WATER LEVEL DATA					
DATE	TIME	ELAPSED TIME (HR)	DEPTH (FT) TO: BOTTOM OF CASING	DEPTH (FT) TO: BOTTOM OF HOLE	DEPTH (FT) TO: WATER

SAMPLE IDENTIFICATION

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon

SUMMARY

OVERBURDEN (LIN FT): 5.0
ROCK CORED (LIN FT): --
SAMPLES: 2S

BORING NO. B223

H&A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists	TEST BORING REPORT	BORING NO. B224

PROJECT: ROTH BROS. SMELTING CORPORATION - PHASE II
CLIENT: NIXON HARGRAVE DEVANS & DOYLE
CONTRACTOR: PARRATT-WOLFF, INC.

FILE NO. 70185-42
SHEET NO. 1 OF 1
LOCATION: See Plan
ELEVATION:
DATUM:
START: 26 October 1990
FINISH: 26 October 1990
DRILLER: D. Richmond
H&A REP: W. Lanik

ITEM	CASING	DRIVE SAMPLER	CORE BARREL
TYPE	Auger	SS	---
INSIDE DIAMETER (IN)	4-1/4	1-3/8	---
HAMMER WEIGHT (LB)	---	140	---
HAMMER FALL (IN)	---	30	---

DRILLING EQUIPMENT & PROCEDURES

RIG TYPE: Mobile B-57, Truck Mounted
BIT TYPE: ---
DRILL MUD: ---
OTHER: Advanced auger through asphalt to 1.0 ft.

DEPTH (FT)	CASING BLOWS PER FT	SAMPLER BLOWS PER 6 IN	SAMPLE NUMBER & RECOVERY	SAMPLE DEPTH (FT)	STRATA CHANGE (FT)	VISUAL CLASSIFICATION AND REMARKS
					1.0	-ASPHALT WITH SUB-BASE-
		7 5 8 8	S1 24"/24"	1.0 3.0	3.0	Medium dense brown to dark brown sandy SILT, trace gravel, with cinders. -FILL-
		7 6 7 7	S2 18"/24"	3.0 5.0		Medium dense gray-brown to dark brown mottled coarse to fine SAND, little to trace gravel, trace silt, with sand, little organics layer. -LACUSTRINE-
5						Bottom of Boring at 5.0 ft.
10						
15						
20						
25						

WATER LEVEL DATA

DATE	TIME	ELAPSED TIME (HR)	DEPTH (FT) TO: BOTTOM OF CASING	BOTTOM OF HOLE	WATER

SAMPLE IDENTIFICATION

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon

SUMMARY

OVERBURDEN (LIN FT): 5.0
ROCK CORED (LIN FT): --
SAMPLES: 2S
BORING NO. B224

H&A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists	TEST BORING REPORT	BORING NO. B225

PROJECT: ROTH BROS. SMELTING CORPORATION - PHASE II
CLIENT: NIXON HARGRAVE DEVANS & DOYLE
CONTRACTOR: PARRATT-WOLFF, INC.

FILE NO. 70185-42
SHEET NO. 1 OF 1
LOCATION: See Plan

ITEM	CASING	DRIVE SAMPLER	CORE BARREL
TYPE	Auger	SS	---
INSIDE DIAMETER (IN)	4-1/4	2-3/8	---
HAMMER WEIGHT (LB)	---	140	---
HAMMER FALL (IN)	---	30	---

DRILLING EQUIPMENT & PROCEDURES

RIG TYPE: Mobile B-57, Truck Mounted
BIT TYPE: ---
DRILL MUD: ---
OTHER: Advanced augers through concrete pad 0.8 ft.

ELEVATION:
DATUM:
START: 26 October 1990
FINISH: 26 October 1990
DRILLER: D. Richmond
H&A REP: W. Lanik

DEPTH (FT)	CASING BLOWS PER FT	SAMPLER BLOWS PER 6 IN	SAMPLE NUMBER & RECOVERY	SAMPLE DEPTH (FT)	STRATA CHANGE (FT)	VISUAL CLASSIFICATION AND REMARKS
					0.8	-CONCRETE PAD-
		9 9 9	S1 15"/24"	1.0 3.0	1.5	Loose brown gravelly coarse SAND. -FILL-
		8 4 3 3	S2* 18"/24"	3.0 5.0	3.0	Loose dark brown sandy SILT, little gravel, with cinders. -FILL- Loose dark brown ORGANIC SILT, with layer of light brown silt from 3.0 to 4.0 ft. -LACUSTRINE- Loose light brown silty fine SAND, grading into coarse to medium SAND, with layer of organic silt.
5		4 3 5 5	S3* 24"/24"	5.0 7.0		
						Bottom of Boring at 7.0 ft.
10						Notes: *1. Sample obtained with 1-3/8 in. ID split spoon. 2. Sample S1 submitted for chemical analysis.
15						
20						
25						

WATER LEVEL DATA					
DATE	TIME	ELAPSED TIME (HR)	DEPTH (FT) TO: BOTTOM OF CASING	DEPTH (FT) TO: BOTTOM OF HOLE	DEPTH (FT) TO: WATER

SAMPLE IDENTIFICATION

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon

SUMMARY

OVERBURDEN (LIN FT): 7.0
ROCK CORED (LIN FT): --
SAMPLES: 3S

BORING NO. B225

H&A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists	TEST BORING REPORT	BORING NO. B226

PROJECT: ROTH BROS. SMELTING CORPORATION - PHASE II
CLIENT: NIXON HARGRAVE DEVANS & DOYLE
CONTRACTOR: PARRATT-WOLFF, INC.

FILE NO. 70185-42
SHEET NO. 1 OF 1
LOCATION: See Plan

ITEM	CASING	DRIVE SAMPLER	CORE BARREL
TYPE	Auger	SS	---
INSIDE DIAMETER (IN)	4-1/4	2-3/8	---
HAMMER WEIGHT (LB)	---	140	---
HAMMER FALL (IN)	---	30	---

DRILLING EQUIPMENT & PROCEDURES

RIG TYPE: Mobile B-57, Truck Mounted
BIT TYPE: ---
DRILL MUD: ---
OTHER: Advanced augers through asphalt to 1.0 ft.

ELEVATION:
DATUM:
START: 26 October 1990
FINISH: 26 October 1990
DRILLER: D. Richmond
H&A REP: W. Lanik

DEPTH (FT)	CASING BLOWS PER FT	SAMPLER BLOWS PER 6 IN	SAMPLE NUMBER & RECOVERY	SAMPLE DEPTH (FT)	STRATA CHANGE (FT)	VISUAL CLASSIFICATION AND REMARKS
					1.0	-ASPHALT WITH SUB-BASE-
		14 15 15 16	S1 18"/24"	1.0 3.0	2.5	Medium dense dark brown coarse to fine SAND, little gravel, with metal fragments. -FILL-
		3 4 3 3	S2* 18"/24"	3.0 5.0	5.0	Medium dense dark brown sandy ORGANIC SILT. Loose dark brown sandy ORGANIC SILT, trace fine gravel. -LACUSTRINE-
5		4 5 6 8	S3* 22"/24"	5.0 7.0	6.5	Loose light brown medium to fine SAND, with occasional silt seam. -LACUSTRINE-
						Medium dense red-brown sandy SILT, trace gravel. -GLACIAL TILL-
						Bottom of Boring at 7.0 ft.
10						Notes: *1. Sample obtained with 1-3/8 in ID split spoon. 2. Sample S1 submitted for chemical analysis.
15						
20						
25						

WATER LEVEL DATA

DATE	TIME	ELAPSED TIME (HR)	DEPTH (FT) TO: BOTTOM OF CASING	DEPTH (FT) TO: BOTTOM OF HOLE	DEPTH (FT) TO: WATER

SAMPLE IDENTIFICATION

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon

SUMMARY

OVERBURDEN (LIN FT): 7.0
ROCK CORED (LIN FT): --
SAMPLES: 3S

BORING NO. B226

H&A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists	TEST BORING REPORT	BORING NO. B227

PROJECT: ROTH BROS. SMELTING CORPORATION - PHASE II
CLIENT: NIXON HARGRAVE DEVANS & DOYLE
CONTRACTOR: PARRATT-WOLFF, INC.

FILE NO. 70185-42
SHEET NO. 1 OF 1
LOCATION: See Plan

ITEM	CASING	DRIVE SAMPLER	CORE BARREL
TYPE	Auger	SS	---
INSIDE DIAMETER (IN)	4-1/4	1-3/8	---
HAMMER WEIGHT (LB)	---	140	---
HAMMER FALL (IN)	---	30	---

DRILLING EQUIPMENT & PROCEDURES

RIG TYPE: Mobile B-57, Truck Mounted
BIT TYPE: ---
DRILL MUD: ---
OTHER: Advanced augers through asphalt to 1.0 ft.

ELEVATION:
DATUM:
START: 25 October 1990
FINISH: 25 October 1990
DRILLER: D. Richmond
H&A REP: W. Lanik

DEPTH (FT)	CASING BLOWS PER FT	SAMPLER BLOWS PER 6 IN	SAMPLE NUMBER & RECOVERY	SAMPLE DEPTH (FT)	STRATA CHANGE (FT)	VISUAL CLASSIFICATION AND REMARKS
						-ASPHALT WITH SUB-BASE-
		2 2 4 8	S1 22"/24"	1.0 3.0	1.2	Loose gray-brown to light brown mottled silty coarse to fine SAND, with layer of organic rich silt. -LACUSTRINE-
						Bottom of Boring at 3.0 ft.
5						
10						
15						
20						
25						

WATER LEVEL DATA

DATE	TIME	ELAPSED TIME (HR)	DEPTH (FT) TO: BOTTOM OF CASING	BOTTOM OF HOLE	WATER

SAMPLE IDENTIFICATION

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon

SUMMARY

OVERBURDEN (LIN FT):	3.0
ROCK CORED (LIN FT):	--
SAMPLES:	1S
BORING NO.	B227

H&A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists	TEST BORING REPORT	BORING NO. B228

PROJECT: ROTH BROS. SMELTING CORPORATION - PHASE II
CLIENT: NIXON HARGRAVE DEVANS & DOYLE
CONTRACTOR: PARRATT-WOLFF, INC.

FILE NO. 70185-42
SHEET NO. 1 OF 1
LOCATION: See Plan

ITEM	CASING	DRIVE SAMPLER	CORE BARREL
TYPE	Auger	SS	---
INSIDE DIAMETER (IN)	4-1/4	2-3/8	---
HAMMER WEIGHT (LB)	---	140	---
HAMMER FALL (IN)	---	30	---

DRILLING EQUIPMENT & PROCEDURES

RIG TYPE: Mobile B-57, Truck Mounted
BIT TYPE: ---
DRILL MUD: ---
OTHER: Advanced augers to 0.5 ft.

ELEVATION:
DATUM:
START: 25 October 1990
FINISH: 25 October 1990
DRILLER: D. Richmond
H&A REP: W. Lanik

DEPTH (FT)	CASING BLOWS PER FT	SAMPLER BLOWS PER 6 IN	SAMPLE NUMBER & RECOVERY	SAMPLE DEPTH (FT)	STRATA CHANGE (FT)	VISUAL CLASSIFICATION AND REMARKS
0		2 3 5 5	S1 24"/24"	0.5 2.5	1.2	Loose dark brown GRAVEL, trace silt, trace organics, with black staining, oily odor. -FILL-
						Soft dark brown mottled ORGANIC SILT, trace sand, with layer of light brown silt. -LACUSTRINE-
						Bottom of Boring at 2.5 ft.
						Note: Sample S1 submitted for chemical analysis.

5
10
15
20
25

WATER LEVEL DATA

DATE	TIME	ELAPSED TIME (HR)	DEPTH (FT) TO: BOTTOM OF CASING	DEPTH (FT) TO: BOTTOM OF HOLE	DEPTH (FT) TO: WATER

SAMPLE IDENTIFICATION

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon

SUMMARY

OVERBURDEN (LIN FT): 2.5
ROCK CORED (LIN FT): --
SAMPLES: 1S
BORING NO. B228

H&A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists	TEST BORING REPORT	BORING NO. B229

PROJECT: ROTH BROS. SMELTING CORPORATION - PHASE II
CLIENT: NIXON HARGRAVE DEVANS & DOYLE
CONTRACTOR: PARRATT-WOLFF, INC.

FILE NO. 70185-42
SHEET NO. 1 OF 1
LOCATION: See Plan

ITEM	CASING	DRIVE SAMPLER	CORE BARREL
TYPE	Auger	SS	---
INSIDE DIAMETER (IN)	4-1/4	2-3/8	---
HAMMER WEIGHT (LB)	---	140	---
HAMMER FALL (IN)	---	30	---

DRILLING EQUIPMENT & PROCEDURES

RIG TYPE: Mobile B-57, Truck Mounted
BIT TYPE: ---
DRILL MUD: ---
OTHER: Advanced augers through asphalt to 1.0 ft.

ELEVATION:
DATUM:
START: 26 October 1990
FINISH: 26 October 1990
DRILLER: D. Richmond
H&A REP: W. Lanik

DEPTH (FT)	CASING BLOWS PER FT	SAMPLER BLOWS PER 6 IN	SAMPLE NUMBER & RECOVERY	SAMPLE DEPTH (FT)	STRATA CHANGE (FT)	VISUAL CLASSIFICATION AND REMARKS
					1.0	-ASPHALT WITH SUB-BASE-
		30 28 22 17	S1 20"/24"	1.0 3.0		Medium dense dark brown gravelly coarse to fine SAND, trace silt, with layer of black cinders from 1.5 to 1.8 ft. -FILL-
		2 3 3 3	S2* 24"/24"	3.0 5.0	3.5	Loose dark brown sandy SILT, trace gravel, with cinders and wood fragments. -FILL-
5						Loose gray-brown to brown mottled coarse to fine SAND, little to trace gravel, trace silt, with layer of silt, little organics. -LACUSTRINE-
						Bottom of Boring at 5.0 ft.
10						Notes: *1. Sample obtained with 1-3/8 in. ID split spoon. 2. Sample S1 submitted for chemical analysis.
15						
20						
25						

WATER LEVEL DATA

DATE	TIME	ELAPSED TIME (HR)	DEPTH (FT) TO: BOTTOM OF CASING	DEPTH (FT) TO: BOTTOM OF HOLE	DEPTH (FT) TO: WATER

SAMPLE IDENTIFICATION

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon

SUMMARY

OVERBURDEN (LIN FT): 5.0
ROCK CORED (LIN FT): --
SAMPLES: 2S
BORING NO. B229

H&A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists	TEST BORING REPORT	BORING NO. B230

PROJECT: ROTH BROS. SMELTING CORPORATION - PHASE II
CLIENT: NIXON HARGRAVE DEVANS & DOYLE
CONTRACTOR: PARRATT-WOLFF, INC.

FILE NO. 70185-42
SHEET NO. 1 OF 1
LOCATION: See Plan

ITEM	CASING	DRIVE SAMPLER	CORE BARREL
TYPE	Auger	SS	---
INSIDE DIAMETER (IN)	4-1/4	1-3/8	---
HAMMER WEIGHT (LB)	---	140	---
HAMMER FALL (IN)	---	30	---

DRILLING EQUIPMENT & PROCEDURES

RIG TYPE: Mobile B-57, Truck Mounted
BIT TYPE: ---
DRILL MUD: ---
OTHER: Advanced augers through asphalt to 0.5 ft.

ELEVATION:
DATUM:
START: 26 October 1990
FINISH: 26 October 1990
DRILLER: D. Richmond
H&A REP: W. Lanik

DEPTH (FT)	CASING BLOWS PER FT	SAMPLER BLOWS PER 6 IN	SAMPLE NUMBER & RECOVERY	SAMPLE DEPTH (FT)	STRATA CHANGE (FT)	VISUAL CLASSIFICATION AND REMARKS
					0.5	-ASPHALT WITH SUB-BASE-
		12 7 7 5	S1 14"/24"	0.5 2.5		Medium dense dark brown to black gravelly coarse to fine SAND, with cinders. -FILL- Same.
		5 3 2 2	S2 20"/24"	2.5 4.5	3.0	Loose gray-brown to dark brown mottled coarse to fine SAND, little to trace gravel, trace silt, with layer of sand, little organics. Same. -LACUSTRINE-
5		4 5 6 6	S3 24"/24"	4.5 6.5	5.3	Medium dense light brown fine SAND, with frequent seams of coarse sand, and occasional seam of silt. -LACUSTRINE-
						Bottom of Boring at 6.5 ft.
10						
15						
20						
25						

WATER LEVEL DATA

DATE	TIME	ELAPSED TIME (HR)	DEPTH (FT) TO: BOTTOM OF CASING	DEPTH (FT) TO: BOTTOM OF HOLE	DEPTH (FT) TO: WATER

SAMPLE IDENTIFICATION

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon

SUMMARY

OVERBURDEN (LIN FT): 6.5
ROCK CORED (LIN FT): --
SAMPLES: 3S

BORING NO. FOIL 223665

H&A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists	TEST BORING REPORT	BORING NO. B231

PROJECT: ROTH BROS. SMELTING CORPORATION - PHASE II
CLIENT: NIXON HARGRAVE DEVANS & DOYLE
CONTRACTOR: PARRATT-WOLFF, INC.

FILE NO. 70185-42
SHEET NO. 1 OF 1
LOCATION: See Plan

ITEM	CASING	DRIVE SAMPLER	CORE BARREL
TYPE	Auger	SS	---
INSIDE DIAMETER (IN)	4-1/4	2-3/8	---
HAMMER WEIGHT (LB)	---	140	---
HAMMER FALL (IN)	---	30	---

DRILLING EQUIPMENT & PROCEDURES

RIG TYPE: Mobile B-57, Truck Mounted
BIT TYPE: ---
DRILL MUD: ---
OTHER: Advanced augers through asphalt to 1.0 ft.

ELEVATION:
DATUM:
START: 26 October 1990
FINISH: 26 October 1990
DRILLER: D. Richmond
H&A REP: W. Lanik

DEPTH (FT)	CASING BLOWS PER FT	SAMPLER BLOWS PER 6 IN	SAMPLE NUMBER & RECOVERY	SAMPLE DEPTH (FT)	STRATA CHANGE (FT)	VISUAL CLASSIFICATION AND REMARKS
					1.0	-ASPHALT WITH SUB-BASE-
		15 15 16 9	S1 20"/24"	1.0 3.0		Medium dense brown to red-brown sandy SILT, little to trace gravel, trace cinders. -FILL-
		5 2 2 3	S2* 18"/24"	3.0 5.0	3.3	Loose gray-brown to dark brown mottled coarse to fine SAND, little to trace gravel, trace silt, with of sand, little organics.
5		2 3 5 9	S3* 24"/24"	5.0 7.0	5.7	Same. -LACUSTRINE-
						Medium dense light brown medium to fine SAND, with frequent layers of silt. -LACUSTRINE-
10						Bottom of Boring at 7.0 ft.
						Notes: *1. Sample obtained with 1-3/8 in. ID split spoon. 2. Sample S1 is submitted for chemical analysis.
15						
20						
25						

WATER LEVEL DATA

DATE	TIME	ELAPSED TIME (HR)	DEPTH (FT) TO: BOTTOM OF CASING	DEPTH (FT) TO: BOTTOM OF HOLE	DEPTH (FT) TO: WATER

SAMPLE IDENTIFICATION

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon

SUMMARY

OVERBURDEN (LIN FT): 7.0
ROCK CORED (LIN FT): --
SAMPLES: 3S
BORING NO. B231

H&A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists	TEST BORING REPORT	BORING NO. B232

PROJECT: ROTH BROS. SMELTING CORPORATION - PHASE II
CLIENT: NIXON HARGRAVE DEVANS & DOYLE
CONTRACTOR: PARRATT-WOLFF, INC.

FILE NO. 70185-42
SHEET NO. 1 OF 1
LOCATION: See Plan

ITEM	CASING	DRIVE SAMPLER	CORE BARREL
TYPE	Auger	SS	---
INSIDE DIAMETER (IN)	4-1/4	1-3/8	---
HAMMER WEIGHT (LB)	---	140	---
HAMMER FALL (IN)	---	30	---

DRILLING EQUIPMENT & PROCEDURES

RIG TYPE: Mobile B-57, Truck Mounted
BIT TYPE: ---
DRILL MUD: ---
OTHER: Advanced augers through asphalt to 0.5 ft.

ELEVATION:
DATUM:
START: 26 October 1990
FINISH: 26 October 1990
DRILLER: D. Richmond
H&A REP: W. Lanik

DEPTH (FT)	CASING BLOWS PER FT	SAMPLER BLOWS PER 6 IN	SAMPLE NUMBER & RECOVERY	SAMPLE DEPTH (FT)	STRATA CHANGE (FT)	VISUAL CLASSIFICATION AND REMARKS
					0.5	-ASPHALT WITH SUB-BASE-
		11 9 8 10	S1 14"/24"	0.5 2.5	2.6	Medium dense light brown mottled medium to fine SAND, trace gravel, with wood fragments. -FILL-
		4 3 3 3	S2 20"/24"	2.5 4.5		Loose dark brown fine sandy ORGANIC SILT. -LACUSTRINE-
5						Bottom of Boring at 4.5 ft.
10						
15						
20						
25						

WATER LEVEL DATA

DATE	TIME	ELAPSED TIME (HR)	DEPTH (FT) TO: BOTTOM OF CASING	DEPTH (FT) TO: BOTTOM OF HOLE	DEPTH (FT) TO: WATER

SAMPLE IDENTIFICATION

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon

SUMMARY

OVERBURDEN (LIN FT): 4.5
ROCK CORED (LIN FT): --
SAMPLES: 2S
BORING NO. B232

H&A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists	TEST BORING REPORT	BORING NO. B233

PROJECT: ROTH BROS. SMELTING CORPORATION - PHASE II
CLIENT: NIXON HARGRAVE DEVANS & DOYLE
CONTRACTOR: PARRATT-WOLFF, INC.

FILE NO. 70185-42
SHEET NO. 1 OF 1
LOCATION: See Plan

ITEM	CASING	DRIVE SAMPLER	CORE BARREL
TYPE	Auger	SS	---
INSIDE DIAMETER (IN)	4-1/4	2-3/8	---
HAMMER WEIGHT (LB)	---	140	---
HAMMER FALL (IN)	---	30	---

DRILLING EQUIPMENT & PROCEDURES

RIG TYPE: Mobile B-57, Truck Mounte
BIT TYPE: ---
DRILL MUD: ---
OTHER: Advanced augers through asphalt to 1.0 ft.

ELEVATION:
DATUM:
START: 26 October 1990
FINISH: 26 October 1990
DRILLER: D. Richmond
H&A REP: W. Lanik

DEPTH (FT)	CASING BLOWS PER FT	SAMPLER BLOWS PER 6 IN	SAMPLE NUMBER & RECOVERY	SAMPLE DEPTH (FT)	STRATA CHANGE (FT)	VISUAL CLASSIFICATION AND REMARKS
					1.0	-ASPHALT WITH SUB-BASE-
		18 20 15 15	S1 24"/24"	1.0 3.0	2.7	Medium dense dark brown mottled sandy SILT, little gravel, with cinders. -FILL-
		5 6 6 7	S2* 24"/24"	3.0 5.0	4.5	Stiff dark brown sandy ORGANIC SILT, trace gravel. -LACUSTRINE-
5						Medium dense brown mottled coarse to fine SAND, little gravel, trace silt. -LACUSTRINE-
						Bottom of Boring at 5.0 ft.
10						Notes: *1. Sample obtained with 1-3/8 in. ID split spoon. 2. Sample S1 submitted for chemical analysis.
15						
20						
25						

WATER LEVEL DATA

DATE	TIME	ELAPSED TIME (HR)	DEPTH (FT) TO: BOTTOM OF CASING	DEPTH (FT) TO: BOTTOM OF HOLE	DEPTH (FT) TO: WATER

SAMPLE IDENTIFICATION

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon

SUMMARY

OVERBURDEN (LIN FT): 5.0
ROCK CORED (LIN FT): --
SAMPLES: 2S
BORING NO. B233

H&A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists	TEST BORING REPORT	BORING NO. B234

PROJECT: ROTH BROS. SMELTING CORPORATION - PHASE II
CLIENT: NIXON HARGRAVE DEVANS & DOYLE
CONTRACTOR: PARRATT-WOLFF, INC.

FILE NO. 70185-42
SHEET NO. 1 OF 1
LOCATION: See Plan

ITEM	CASING	DRIVE SAMPLER	CORE BARREL
TYPE	Auger	SS	---
INSIDE DIAMETER (IN)	4-1/4	2-3/8	---
HAMMER WEIGHT (LB)	---	140	---
HAMMER FALL (IN)	---	30	---

DRILLING EQUIPMENT & PROCEDURES

RIG TYPE: Mobile B-57, Truck Mounted
BIT TYPE: ---
DRILL MUD: ---
OTHER: Advanced augers through asphalt to 1.0 ft.

ELEVATION:
DATUM:
START: 26 October 1990
FINISH: 26 October 1990
DRILLER: D. Richmond
H&A REP: W. Lanik

DEPTH (FT)	CASING BLOWS PER FT	SAMPLER BLOWS PER 6 IN	SAMPLE NUMBER & RECOVERY	SAMPLE DEPTH (FT)	STRATA CHANGE (FT)	VISUAL CLASSIFICATION AND REMARKS
					1.0	-ASPHALT WITH SUB-BASE-
		28 30 58 54	S1 20"/24"	1.0 3.0		Dense red-brown sandy SILT, little gravel. -FILL-
		12 16 25 42	S2* 6"/24"	3.0 5.0	3.0	Dense brown coarse to fine SAND, with concrete pieces. -FILL-
5						Bottom of Boring at 5.0 ft.
10						
15						
20						
25						

Notes:

*1. Sample obtained with 1-3/8 in. ID split spoon.

2. Sample S1 submitted for chemical analysis.

WATER LEVEL DATA

DATE	TIME	ELAPSED TIME (HR)	DEPTH (FT) TO: BOTTOM OF CASING	DEPTH (FT) TO: BOTTOM OF HOLE	DEPTH (FT) TO: WATER

SAMPLE IDENTIFICATION

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon

SUMMARY

OVERBURDEN (LIN FT):	5.0
ROCK CORED (LIN FT):	--
SAMPLES:	2S
BORING NO.	B234

H&A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists	TEST BORING REPORT	BORING NO. B235

PROJECT: ROTH BROS. SMELTING CORPORATION - PHASE II
CLIENT: NIXON HARGRAVE DEVANS & DOYLE
CONTRACTOR: PARRATT-WOLFF, INC.

FILE NO. 70185-42
SHEET NO. 1 OF 1
LOCATION: See Plan

ITEM	CASING	DRIVE SAMPLER	CORE BARREL
TYPE	Auger	SS	---
INSIDE DIAMETER (IN)	4-1/4	1-3/8	---
HAMMER WEIGHT (LB)	---	140	---
HAMMER FALL (IN)	---	30	---

DRILLING EQUIPMENT & PROCEDURES

RIG TYPE: Mobile B-57, Truck Mounted
BIT TYPE: ---
DRILL MUD: ---
OTHER: ---

ELEVATION:
DATUM:
START: 29 October 1990
FINISH: 29 October 1990
DRILLER: D. Richmond
H&A REP: W. Lanik

DEPTH (FT)	CASING BLOWS PER FT	SAMPLER BLOWS PER 6 IN	SAMPLE NUMBER & RECOVERY	SAMPLE DEPTH (FT)	STRATA CHANGE (FT)	VISUAL CLASSIFICATION AND REMARKS
		5 13 13 15	S1 20"/24"	0.0 2.0	0.4	Medium dense brown gravelly coarse to medium SAND.
		9 2 1 2	S2 8"/24"	2.0 4.0		Medium dense black CINDERS and ASH. -FILL- Same, except very loose. -FILL- Same.
5		5 4 4 3	S3 24"/24"	4.0 6.0	4.4	Medium stiff light brown mottled SILT, trace coarse to medium sand, with layer coarse to medium sand from 4.4 to 5.0 ft. -LACUSTRINE-
						Bottom of Boring at 6.0 ft.
10						
15						
20						
25						

WATER LEVEL DATA

DATE	TIME	ELAPSED TIME (HR)	DEPTH (FT) TO: BOTTOM OF CASING	DEPTH (FT) TO: BOTTOM OF HOLE	DEPTH (FT) TO: WATER

SAMPLE IDENTIFICATION

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon

SUMMARY

OVERBURDEN (LIN FT): 6.0
ROCK CORED (LIN FT): --
SAMPLES: 3S
BORING NO. B235

H&A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists	TEST BORING REPORT	BORING NO. B236

PROJECT: ROTH BROS. SMELTING CORPORATION - PHASE II
CLIENT: NIXON HARGRAVE DEVANS & DOYLE
CONTRACTOR: PARRATT-WOLFF, INC.

FILE NO. 70185-42
SHEET NO. 1 OF 1
LOCATION: See Plan
15 ft. NW
ELEVATION:
DATUM:
START: 29 October 1990
FINISH: 29 October 1990
DRILLER: D. Richmond
H&A REP: W. Lanik

ITEM	CASING	DRIVE SAMPLER	CORE BARREL
TYPE	Auger	SS	---
INSIDE DIAMETER (IN)	4-1/4	1-3/8	---
HAMMER WEIGHT (LB)	---	140	---
HAMMER FALL (IN)	---	30	---

DRILLING EQUIPMENT & PROCEDURES

RIG TYPE: Mobile B-57, Truck Mounted
BIT TYPE: ---
DRILL MUD: ---
OTHER: ---

DEPTH (FT)	CASING BLOWS PER FT	SAMPLER BLOWS PER 6 IN	SAMPLE NUMBER & RECOVERY	SAMPLE DEPTH (FT)	STRATA CHANGE (FT)	VISUAL CLASSIFICATION AND REMARKS
0		3 5 3 5	S1 10"/24"	0.0 2.0		Loose gray-brown coarse sandy GRAVEL.
						Same. -FILL-
		6 2 1 1	S2 20"/24"	2.0 4.0	2.4	Very loose dark-brown to brown mottled fine sandy SILT, with layer of silt, little organics from 3.2 to 3.8 ft. -LACUSTRINE-
5						Bottom of Boring at 4.0 ft.
10						
15						
20						
25						

WATER LEVEL DATA

DATE	TIME	ELAPSED TIME (HR)	DEPTH (FT) TO: BOTTOM OF CASING	DEPTH (FT) TO: BOTTOM OF HOLE	DEPTH (FT) TO: WATER

SAMPLE IDENTIFICATION

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon

SUMMARY

OVERBURDEN (LIN FT): 4.0
ROCK CORED (LIN FT): --
SAMPLES: 2S

BORING NO. B236

TABLE VI
ROTH BROS. - PLANT 2
ALTERNATIVE REMEDIAL TECHNOLOGIES

METHOD NAME	DEVELOPER	SYNOPSIS OF METHOD	APPLICABILITY	REMARKS	ESTIMATED UNIT COST
Offsite Disposal	--	Excavate soils and dispose as hazardous waste/special waste. Backfill/revegetate.	Soils w/high metals, CLP metals and PCBs.	--	$275-360/Ton
In-Situ Solidification	GeoCon	Treat soils using 36" diameter circular bore, injecting solidification product (a cement-organic clay mix) into soils. An overlapping circular pattern is conducted over the affected areas.	Soils/sludges contaminated with metals and PCBs.	Bulk density increased by 21% End product is a dense, low porosity homogeneous mass of soil.	$195/Ton
Silicate Stabilization (2)	Silicate Technology Corp.	Solidification and stabilization with silicate compounds. Material is excavated, mixed with silicates, and placed in confining pit on site or cast into molds for offsite disposal.	Soils, groundwater and sludges with metals, CN, ammonia and high molecular weight organics.	Wastes immobilized and bound into a hardened, leach-resistant, concrete-like solidified mass.	$104/Ton (if treat > 1,000 cu. yd.)
	Chem Fix Environmental Services, Inc.	Solidification and stabilization of excavated soils using soluble silicates and silicate setting agents.	Soils, sludges with heavy metals, high molecular weight organics.	20%-50% increase in volume of excavated waste. Effective in reducing concentration of lead in extracts of TCLP by 94-99%. No significant volatilization of PCBs during treatment process.	$75/Ton
Contain In-Place with cap/slurry walls	--	Cover affected area with low permeability cap to prevent infiltration. Surround with low permeability bentonite slurry walls.	Most wastes except non-polar organics.	Isolation technology.	$36-44/Ton

H&A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists	TEST BORING REPORT	BORING NO. B237

PROJECT: ROTH BROS. SMELTING CORPORATION - PHASE II
CLIENT: NIXON HARGRAVE DEVANS & DOYLE
CONTRACTOR: PARRATT-WOLFF, INC.

FILE NO. 70185-42
SHEET NO. 1 OF 1
LOCATION: See Plan

ITEM	CASING	DRIVE SAMPLER	CORE BARREL
TYPE	Auger	SS	---
INSIDE DIAMETER (IN)	4-1/4	2-3/8	---
HAMMER WEIGHT (LB)	---	140	---
HAMMER FALL (IN)	---	30	---

DRILLING EQUIPMENT & PROCEDURES

RIG TYPE: Mobile B-57, Truck Mounted
BIT TYPE: ---
DRILL MUD: ---
OTHER: Advanced augers through asphalt to 1.0 ft.

ELEVATION:
DATUM:
START: 29 October 1990
FINISH: 29 October 1990
DRILLER: D. Richmond
H&A REP: W. Lanik

DEPTH (FT)	CASING BLOWS PER FT	SAMPLER BLOWS PER 6 IN	SAMPLE NUMBER & RECOVERY	SAMPLE DEPTH (FT)	STRATA CHANGE (FT)	VISUAL CLASSIFICATION AND REMARKS
						-ASPHALT WITH SUB-BASE- Medium dense gray-brown sandy GRAVEL.
		13 19 9 9	S1 18"/24"	1.0 3.0	1.7	Medium dense brown gravelly medium to fine SAND, trace silt, trace cinders. -FILL- Same, except loose and trace gravel.
		4 6 3 2	S2* 12"/24"	3.0 5.0	4.8	-FILL-
5		2 2 3 7	S3* 11"/24"	5.0 7.0		Medium stiff dark brown to brown sandy ORGANIC SILT. -LACUSTRINE-
						Bottom of Boring at 7.0 ft.
10						Notes: *1. Sample obtained with 1-3/8 in. ID split spoon. 2. Sample S1 submitted for chemical analysis.
15						
20						
25						

WATER LEVEL DATA

DATE	TIME	ELAPSED TIME (HR)	DEPTH (FT) TO: BOTTOM OF CASING	DEPTH (FT) TO: BOTTOM OF HOLE	DEPTH (FT) TO: WATER

SAMPLE IDENTIFICATION

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon

SUMMARY

OVERBURDEN (LIN FT):	7.0
ROCK CORED (LIN FT):	--
SAMPLES:	3S
BORING NO.	B237

H&A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists	TEST BORING REPORT	BORING NO. B238

PROJECT: ROTH BROS. SMELTING CORPORATION - PHASE II
CLIENT: NIXON HARGRAVE DEVANS & DOYLE
CONTRACTOR: PARRATT-WOLFF, INC.

FILE NO. 70185-42
SHEET NO. 1 OF 1
LOCATION: See Plan

ITEM	CASING	DRIVE SAMPLER	CORE BARREL
TYPE	Auger	SS	---
INSIDE DIAMETER (IN)	4-1/4	2-3/8	---
HAMMER WEIGHT (LB)	---	140	---
HAMMER FALL (IN)	---	30	---

DRILLING EQUIPMENT & PROCEDURES

RIG TYPE: Mobile B-57, Truck Mounted
BIT TYPE: ---
DRILL MUD: ---
OTHER: Advanced augers through asphalt to 1.0 ft.

ELEVATION:
DATUM:
START: 29 October 1990
FINISH: 29 October 1990
DRILLER: D. Richmond
H&A REP: W. Lanik

DEPTH (FT)	CASING BLOWS PER FT	SAMPLER BLOWS PER 6 IN	SAMPLE NUMBER & RECOVERY	SAMPLE DEPTH (FT)	STRATA CHANGE (FT)	VISUAL CLASSIFICATION AND REMARKS
					1.0	-ASPHALT WITH SUB-BASE-
		13 9 11 8	S1 20"/24"	1.0 3.0		Medium dense brown to light-brown mottled gravelly medium to fine SAND, with wood fragments. -FILL-
		2 2 2 2	S2* 24"/24"	3.0 5.0	3.2	Soft dark brown sandy ORGANIC SILT, with layer of brown sandy SILT, from 4.5 to 5.0 ft. -LACUSTRINE-
5						Bottom of Boring at 5.0 ft.
10						
15						
20						
25						

Notes:

*1. Sample obtained with 1-3/8 in. ID split spoon.

2. Sample S1 submitted for chemical anlaysis.

WATER LEVEL DATA						SAMPLE IDENTIFICATION	SUMMARY
DATE	TIME	ELAPSED TIME (HR)	DEPTH (FT) TO: BOTTOM OF CASING	DEPTH (FT) TO: BOTTOM OF HOLE	DEPTH (FT) TO: WATER	O Open End Rod T Thin Wall Tube U Undisturbed Sample S Split Spoon	OVERBURDEN (LIN FT): 5.0 ROCK CORED (LIN FT): -- SAMPLES: 2S
							BORING NO. B238

H&A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists	TEST BORING REPORT	BORING NO. B239

PROJECT: ROTH BROS. SMELTING CORPORATION - PHASE II
CLIENT: NIXON HARGRAVE DEVANS & DOYLE
CONTRACTOR: PARRATT-WOLFF, INC.

FILE NO. 70185-42
SHEET NO. 1 OF 1
LOCATION: See Plan

ITEM	CASING	DRIVE SAMPLER	CORE BARREL
TYPE	Auger	SS	---
INSIDE DIAMETER (IN)	4-1/4	2-3/8	---
HAMMER WEIGHT (LB)	---	140	---
HAMMER FALL (IN)	---	30	---

DRILLING EQUIPMENT & PROCEDURES

RIG TYPE: Mobile B-57, Truck Mounted
BIT TYPE: ---
DRILL MUD: ---
OTHER: Advanced augers through asphalt to 1.0 ft.

ELEVATION:
DATUM:
START: 29 October 1990
FINISH: 29 October 1990
DRILLER: D. Richmond
H&A REP: W. Lanik

DEPTH (FT)	CASING BLOWS PER FT	SAMPLER BLOWS PER 6 IN	SAMPLE NUMBER & RECOVERY	SAMPLE DEPTH (FT)	STRATA CHANGE (FT)	VISUAL CLASSIFICATION AND REMARKS
					1.0	-ASPHALT WITH SUB-BASE-
		9 14 12 11	S1 18"/24"	1.0 3.0		Medium dense red-brown to brown sandy SILT, little gravel, with cinders. -FILL-
		8 5 8 6	S2 15"/24"	3.0 5.0		Same, except loose with wood fragments. -FILL-
5		4 5 5 5	S3* 24"/24"	5.0 7.0	5.1	Medium dense red-brown to brown sandy SILT, trace fine gravel, with dark brown layer of silt, little organics from 5.1 to 5.6 ft. -LACUSTRINE-
						Bottom of Boring at 7.0 ft.
10						Notes: *1. Sample obtained with 1-3/8 in. ID split spoon. 2. Samples S1 and S2 submitted for chemical analysis.
15						
20						
25						

WATER LEVEL DATA

DATE	TIME	ELAPSED TIME (HR)	DEPTH (FT) TO: BOTTOM OF CASING	DEPTH (FT) TO: BOTTOM OF HOLE	DEPTH (FT) TO: WATER

SAMPLE IDENTIFICATION

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon

SUMMARY

OVERBURDEN (LIN FT): 7.0
ROCK CORED (LIN FT): --
SAMPLES: 3S
BORING NO. B239

H&A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists	TEST BORING REPORT	BORING NO. B240

PROJECT: ROTH BROS. SMELTING CORPORATION - PHASE II
CLIENT: NIXON HARGRAVE DEVANS & DOYLE
CONTRACTOR: PARRATT-WOLFF, INC.

FILE NO. 70185-42
SHEET NO. 1 OF 1
LOCATION: See Plan

ITEM	CASING	DRIVE SAMPLER	CORE BARREL
TYPE	Auger	SS	---
INSIDE DIAMETER (IN)	4-1/4	1-3/8	---
HAMMER WEIGHT (LB)	---	140	---
HAMMER FALL (IN)	---	30	---

DRILLING EQUIPMENT & PROCEDURES

RIG TYPE: Mobile B-57, Truck Mounted
BIT TYPE: ---
DRILL MUD: ---
OTHER: Advanced augers through asphalt to 1.0 ft.

ELEVATION:
DATUM:
START: 26 October 1990
FINISH: 26 October 1990
DRILLER: D. Richmond
H&A REP: W. Lanik

DEPTH (FT)	CASING BLOWS PER FT	SAMPLER BLOWS PER 6 IN	SAMPLE NUMBER & RECOVERY	SAMPLE DEPTH (FT)	STRATA CHANGE (FT)	VISUAL CLASSIFICATION AND REMARKS
						-ASPHALT WITH SUB-BASE-
		7 10 10 6	S1 24"/24"	1.0 3.0	1.2	Medium dense red-brown sandy SILT, little to trace gravel, trace organics.
		9 8 5 6	S2 18"/24"	3.0 5.0	3.9	Same. -GLACIAL TILL- Medium dense brown coarse to fine SAND, trace gravel, trace silt. -LACUSTRINE-
5						Bottom of Boring at 5.0 ft.
10						
15						
20						
25						

WATER LEVEL DATA

DATE	TIME	ELAPSED TIME (HR)	DEPTH (FT) TO: BOTTOM OF CASING	DEPTH (FT) TO: BOTTOM OF HOLE	DEPTH (FT) TO: WATER

SAMPLE IDENTIFICATION

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon

SUMMARY

OVERBURDEN (LIN FT): 5.0
ROCK CORED (LIN FT): --
SAMPLES: 2S
BORING NO. B240

H&A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists	TEST BORING REPORT	BORING NO. B241

PROJECT: ROTH BROS. SMELTING CORPORATION - PHASE II
CLIENT: NIXON HARGRAVE DEVANS & DOYLE
CONTRACTOR: PARRATT-WOLFF, INC.

FILE NO. 70185-42
SHEET NO. 1 OF 1
LOCATION: See Plan

ITEM	CASING	DRIVE SAMPLER	CORE BARREL
TYPE	Auger	SS	---
INSIDE DIAMETER (IN)	4-1/4	2-3/8	---
HAMMER WEIGHT (LB)	---	140	---
HAMMER FALL (IN)	---	30	---

DRILLING EQUIPMENT & PROCEDURES

RIG TYPE: Mobile B-57, Truck Mounted
BIT TYPE: ---
DRILL MUD: ---
OTHER: Advanced augers through asphalt to 1.0 ft.

ELEVATION:
DATUM:
START: 26 October 1990
FINISH: 26 October 1990
DRILLER: D. Richmond
H&A REP: W. Lanik

DEPTH (FT)	CASING BLOWS PER FT	SAMPLER BLOWS PER 6 IN	SAMPLE NUMBER & RECOVERY	SAMPLE DEPTH (FT)	STRATA CHANGE (FT)	VISUAL CLASSIFICATION AND REMARKS
		15 15 14 14	S1 24"/24"	0.5 2.5	0.5	-ASPHALT WITH SUB-BASE- Medium dense red-brown sandy SILT, little to trace gravel, trace metal fragments and ash. -FILL-
		6 7 7 7	S2* 24"/24"	2.5 4.5		Same, except little to trace ash.
5		6 6 7 8	S3* 16"/24"	4.5 6.5		Same. -FILL-
					6.0	Medium dense light brown medium SAND, with trace organics. -LACUSTRINE-
						Bottom of Boring at 6.5 ft.
10						Notes: *1. Sample obtained with 1-3/8 in. ID. split spoon. 2. Sample S1 submitted for chemical analysis.
15						
20						
25						

WATER LEVEL DATA					
DATE	TIME	ELAPSED TIME (HR)	DEPTH (FT) TO: BOTTOM OF CASING	DEPTH (FT) TO: BOTTOM OF HOLE	DEPTH (FT) TO: WATER

SAMPLE IDENTIFICATION

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon

SUMMARY

OVERBURDEN (LIN FT): 6.5
ROCK CORED (LIN FT): --
SAMPLES: 3S
BORING NO. B241

H&A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists	TEST BORING REPORT	BORING NO. B242

PROJECT: ROTH BROS. SMELTING CORPORATION - PHASE II
CLIENT: NIXON HARGRAVE DEVANS & DOYLE
CONTRACTOR: PARRATT-WOLFF, INC.

FILE NO. 70185-42
SHEET NO. 1 OF 1
LOCATION: See Plan

ITEM	CASING	DRIVE SAMPLER	CORE BARREL
TYPE	Auger	SS	---
INSIDE DIAMETER (IN)	4-1/4	1-3/8	---
HAMMER WEIGHT (LB)	---	140	---
HAMMER FALL (IN)	---	30	---

DRILLING EQUIPMENT & PROCEDURES

RIG TYPE: Mobile B-57, Truck Mounted
BIT TYPE: ---
DRILL MUD: ---
OTHER: Advanced augers through asphalt to 1.0 ft.

ELEVATION:
DATUM:
START: 26 October 1990
FINISH: 26 October 1990
DRILLER: D. Richmond
H&A REP: W. Lanik

DEPTH (FT)	CASING BLOWS PER FT	SAMPLER BLOWS PER 6 IN	SAMPLE NUMBER & RECOVERY	SAMPLE DEPTH (FT)	STRATA CHANGE (FT)	VISUAL CLASSIFICATION AND REMARKS
					1.0	-ASPHALT WITH SUB-BASE-
		13 14 15 15	S1 24"/24"	1.0 3.0		Medium dense red-brown sandy SILT, little gravel. -FILL-
		11 14 15 16	S2 3"/24"	3.0 5.0		Same. -FILL-
5						Bottom of Boring at 5.0 ft.
10						
15						
20						
25						

WATER LEVEL DATA

DATE	TIME	ELAPSED TIME (HR)	DEPTH (FT) TO: BOTTOM OF CASING	BOTTOM OF HOLE	WATER

SAMPLE IDENTIFICATION

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon

SUMMARY

OVERBURDEN (LIN FT): 5.0
ROCK CORED (LIN FT): --
SAMPLES: 2S
BORING NO. B242

H&A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists	TEST BORING REPORT	BORING NO. B243

PROJECT: ROTH BROS. SMELTING CORPORATION - PHASE II
CLIENT: NIXON HARGRAVE DEVANS & DOYLE
CONTRACTOR: PARRATT-WOLFF, INC.

FILE NO. 70185-42
SHEET NO. 1 OF 1
LOCATION: See Plan

ITEM	CASING	DRIVE SAMPLER	CORE BARREL
TYPE	Auger	SS	---
INSIDE DIAMETER (IN)	4-1/4	2-3/8	---
HAMMER WEIGHT (LB)	---	140	---
HAMMER FALL (IN)	---	30	---

DRILLING EQUIPMENT & PROCEDURES

RIG TYPE: Mobile B-57, Truck Mounted
BIT TYPE: ---
DRILL MUD: ---
OTHER: Advanced augers through asphalt to 1.0 ft.

ELEVATION:
DATUM:
START: 29 October 1990
FINISH: 29 October 1990
DRILLER: D. Richmond
H&A REP: W. Lanik

DEPTH (FT)	CASING BLOWS PER FT	SAMPLER BLOWS PER 6 IN	SAMPLE NUMBER & RECOVERY	SAMPLE DEPTH (FT)	STRATA CHANGE (FT)	VISUAL CLASSIFICATION AND REMARKS
						-ASPHALT WITH SUB-BASE-
		14 10 8 6	S1 14"/24"	1.0 3.0	1.8	Medium dense gray-brown coarse to fine sandy GRAVEL.
		5 10 14 7	S2 20"/24"	3.0 5.0		Loose black and brown mottled SILT, little gravel, with cinder fragments and ash. Same, except medium dense. -FILL-
5		3 5 5 6	S3* 24"/24"	5.0 7.0	5.2	Medium dense light brown mottled fine sandy SILT, with layer of coarse to medium sand from 5.2 to 5.7 ft. -LACUSTRINE-
						Bottom of Boring at 7.0 ft.
10						Notes: *1. Sample obtained with 1-3/8 in. ID split spoon. 2. Samples S1 and S2 submitted for chemical analysis.
15						
20						
25						

WATER LEVEL DATA

DATE	TIME	ELAPSED TIME (HR)	DEPTH (FT) TO: BOTTOM OF CASING	DEPTH (FT) TO: BOTTOM OF HOLE	DEPTH (FT) TO: WATER

SAMPLE IDENTIFICATION

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon

SUMMARY

OVERBURDEN (LIN FT):	7.0
ROCK CORED (LIN FT):	--
SAMPLES:	3S
BORING NO.	B243

H&A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists	TEST BORING REPORT	BORING NO. B244

PROJECT: ROTH BROS. SMELTING CORPORATION - PHASE II
CLIENT: NIXON HARGRAVE DEVANS & DOYLE
CONTRACTOR: PARRATT-WOLFF, INC.

FILE NO. 70185-42
SHEET NO. 1 OF 1
LOCATION: See Plan

ITEM	CASING	DRIVE SAMPLER	CORE BARREL
TYPE	Auger	SS	---
INSIDE DIAMETER (IN)	4-1/4	1-3/8	---
HAMMER WEIGHT (LB)	---	140	---
HAMMER FALL (IN)	---	30	---

DRILLING EQUIPMENT & PROCEDURES

RIG TYPE: Mobile B-57, Truck Mounted
BIT TYPE: ---
DRILL MUD: ---
OTHER: Advanced augers through asphalt to 1.0 ft.

ELEVATION:
DATUM:
START: 29 October 1990
FINISH: 29 October 1990
DRILLER: D. Richmond
H&A REP: W. Lanik

DEPTH (FT)	CASING BLOWS PER FT	SAMPLER BLOWS PER 6 IN	SAMPLE NUMBER & RECOVERY	SAMPLE DEPTH (FT)	STRATA CHANGE (FT)	VISUAL CLASSIFICATION AND REMARKS
					1.0	-ASPHALT WITH SUB-BASE-
		5 6 7 8	S1 18"/24"	1.0 3.0		Medium dense dark brown SILT, trace gravel, with cinders and ash. -FILL-
		33 25 11 4	S2 22"/24"	3.0 5.0		Dense dark brown gravelly coarse to fine SAND, trace silt, with cinders and ash. Very loose dark brown gravelly SILT, with ash. -FILL-
5		WOH WOH 4 4	S3 24"/24"	5.0 7.0	6.0	Medium stiff light to dark brown laminated SILT. -LACUSTRINE-
						Bottom of Boring at 7.0 ft.
10						
15						
20						
25						

WATER LEVEL DATA

DATE	TIME	ELAPSED TIME (HR)	DEPTH (FT) TO: BOTTOM OF CASING	DEPTH (FT) TO: BOTTOM OF HOLE	DEPTH (FT) TO: WATER

SAMPLE IDENTIFICATION

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon

SUMMARY

OVERBURDEN (LIN FT):	7.0
ROCK CORED (LIN FT):	--
SAMPLES:	3S
BORING NO.	B244

H&A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists	TEST BORING REPORT	BORING NO. B245

PROJECT: ROTH BROS. SMELTING CORPORATION - PHASE II
CLIENT: NIXON HARGRAVE DEVANS & DOYLE
CONTRACTOR: PARRATT-WOLFF, INC.

FILE NO. 70185-42
SHEET NO. 1 OF 1
LOCATION: See Plan

ITEM	CASING	DRIVE SAMPLER	CORE BARREL
TYPE	Auger	SS	---
INSIDE DIAMETER (IN)	4-1/4	2-3/8	---
HAMMER WEIGHT (LB)	---	140	---
HAMMER FALL (IN)	---	30	---

DRILLING EQUIPMENT & PROCEDURES

RIG TYPE: Mobile B-57, Truck Mounted
BIT TYPE: ---
DRILL MUD: ---
OTHER: Advanced augers through asphalt to 1.0 ft.

ELEVATION:
DATUM:
START: 29 October 1990
FINISH: 29 October 1990
DRILLER: D. Richmond
H&A REP: W. Lanik

DEPTH (FT)	CASING BLOWS PER FT	SAMPLER BLOWS PER 6 IN	SAMPLE NUMBER & RECOVERY	SAMPLE DEPTH (FT)	STRATA CHANGE (FT)	VISUAL CLASSIFICATION AND REMARKS
						-ASPHALT WITH SUB-BASE-
		25 20 17 12	S1 24"/24"	1.0 3.0	1.2	Medium dense dark brown sandy SILT, little gravel, with cinders and wood fragments. -FILL- Same, except with black layer.
		7 2 1 1	S2* 15"/24"	3.0 5.0	3.5	-FILL-
5		WOH 1 6 7	S3* 17"/24"	5.0 7.0	5.0	Very loose light brown mottled SILT. -LACUSTRINE- Loose light brown to black mottled fine SAND. -LACUSTRINE-
						Bottom of Boring at 7.0 ft.
10						Notes: *1. Samples obtained with 1-3/8 in. ID. split spoon. 2. Sample S1 submitted for chemical analysis.
15						
20						
25						

WATER LEVEL DATA

DATE	TIME	ELAPSED TIME (HR)	DEPTH (FT) TO: BOTTOM OF CASING	DEPTH (FT) TO: BOTTOM OF HOLE	DEPTH (FT) TO: WATER

SAMPLE IDENTIFICATION

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon

SUMMARY

OVERBURDEN (LIN FT):	7.0
ROCK CORED (LIN FT):	--
SAMPLES:	3S
BORING NO.	B245

H&A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists	TEST BORING REPORT	BORING NO. B246

PROJECT: ROTH BROS. SMELTING CORPORATION - PHASE II
CLIENT: NIXON HARGRAVE DEVANS & DOYLE
CONTRACTOR: PARRATT-WOLFF, INC.

FILE NO. 70185-42
SHEET NO. 1 OF 1
LOCATION: See Plan

ITEM	CASING	DRIVE SAMPLER	CORE BARREL
TYPE	Auger	SS	---
INSIDE DIAMETER (IN)	4-1/4	1-3/8	---
HAMMER WEIGHT (LB)	---	140	---
HAMMER FALL (IN)	---	30	---

DRILLING EQUIPMENT & PROCEDURES

RIG TYPE: Mobile B-57, Truck Mounted
BIT TYPE: ---
DRILL MUD: ---
OTHER: Advanced augers through asphalt to 1.0 ft.

ELEVATION:
DATUM:
START: 29 October 1990
FINISH: 29 October 1990
DRILLER: D. Richmond
H&A REP: W. Lanik

DEPTH (FT)	CASING BLOWS PER FT	SAMPLER BLOWS PER 6 IN	SAMPLE NUMBER & RECOVERY	SAMPLE DEPTH (FT)	STRATA CHANGE (FT)	VISUAL CLASSIFICATION AND REMARKS
					1.0	-ASPHALT WITH SUB-BASE-
		13 8 9	S1 7"/24"	1.0 3.0		Medium dense dark brown coarse to fine SAND, little silt, trace gravel, with cinders and wood fragments. -FILL-
		8 5 6	S2 18"/24"	3.0 5.0	3.0 4.3	Medium dense red brown sandy SILT. -FILL-
5		6 14				Medium dense light brown medium to fine SAND. -LACUSTRINE-
						Bottom of Boring at 5.0 ft.
10						
15						
20						
25						

WATER LEVEL DATA

DATE	TIME	ELAPSED TIME (HR)	DEPTH (FT) TO: BOTTOM OF CASING	DEPTH (FT) TO: BOTTOM OF HOLE	DEPTH (FT) TO: WATER

SAMPLE IDENTIFICATION

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon

SUMMARY

OVERBURDEN (LIN FT):	5.0
ROCK CORED (LIN FT):	--
SAMPLES:	2S
BORING NO.	B246

H&A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists	TEST BORING REPORT	BORING NO. B247

PROJECT: ROTH BROS. SMELTING CORPORATION - PHASE II
CLIENT: NIXON HARGRAVE DEVANS & DOYLE
CONTRACTOR: PARRATT-WOLFF, INC.

FILE NO. 70185-42
SHEET NO. 1 OF 1
LOCATION: See Plan

ITEM	CASING	DRIVE SAMPLER	CORE BARREL
TYPE	Auger	SS	---
INSIDE DIAMETER (IN)	4-1/4	2-3/8	---
HAMMER WEIGHT (LB)	---	140	---
HAMMER FALL (IN)	---	30	---

DRILLING EQUIPMENT & PROCEDURES

RIG TYPE: Mobile B-57, Truck Mounted
BIT TYPE: ---
DRILL MUD: ---
OTHER: Advanced augers through asphalt to 1.0 ft.

ELEVATION:
DATUM:
START: 29 October 1990
FINISH: 29 October 1990
DRILLER: D. Richmond
H&A REP: W. Lanik

DEPTH (FT)	CASING BLOWS PER FT	SAMPLER BLOWS PER 6 IN	SAMPLE NUMBER & RECOVERY	SAMPLE DEPTH (FT)	STRATA CHANGE (FT)	VISUAL CLASSIFICATION AND REMARKS
					1.0	-ASPHALT WITH SUB-BASE-
		13 31 29 24	S1 2"/24"	1.0 3.0		Dense dark brown gravelly SILT, little coarse to fine sand. Same, except very dense. -FILL-
		7 7 6 5	S2* 20"/24"	3.0 5.0	3.5	Medium dense red-brown sandy SILT, trace gravel, trace organics. -GLACIAL TILL-
5						Bottom of Boring at 5.0 ft.
10						
15						
20						
25						

Note:

*1. Sample obtained with 1-3/8 in. ID split spoon.

WATER LEVEL DATA

DATE	TIME	ELAPSED TIME (HR)	DEPTH (FT) TO: BOTTOM OF CASING	BOTTOM OF HOLE	WATER

SAMPLE IDENTIFICATION

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon

SUMMARY

OVERBURDEN (LIN FT): 5.0
ROCK CORED (LIN FT): --
SAMPLES: 2S
BORING NO. B247

H&A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists	TEST BORING REPORT	BORING NO. B248

PROJECT: ROTH BROS. SMELTING CORPORATION - PHASE II
CLIENT: NIXON HARGRAVE DEVANS & DOYLE
CONTRACTOR: PARRATT-WOLFF, INC.

FILE NO. 70185-42
SHEET NO. 1 OF 1
LOCATION: See Plan

ITEM	CASING	DRIVE SAMPLER	CORE BARREL
TYPE	---	SS	---
INSIDE DIAMETER (IN)	---	1-3/8	---
HAMMER WEIGHT (LB)	---	140	---
HAMMER FALL (IN)	---	30	---

DRILLING EQUIPMENT & PROCEDURES

RIG TYPE: Mobile B-57, Truck Mounted
BIT TYPE: ---
DRILL MUD: ---
OTHER: ---

ELEVATION:
DATUM:
START: 26 October 1990
FINISH: 26 October 1990
DRILLER: D. Richmond
H&A REP: W. Lanik

DEPTH (FT)	CASING BLOWS PER FT	SAMPLER BLOWS PER 6 IN	SAMPLE NUMBER & RECOVERY	SAMPLE DEPTH (FT)	STRATA CHANGE (FT)	VISUAL CLASSIFICATION AND REMARKS
		11 12 10 10	S1 14"/24"	0.0 2.0	2.0	Medium dense dark brown coarse to fine SAND, little gravel, with cinders and wood fragments. -FILL-
		10 6 6 10	S2 19"/24"	2.0 4.0		Medium dense red-brown sandy SILT, trace gravel, with occasional layers of dark brown organic silt. -GLACIAL TILL-
5						Bottom of Boring at 4.0 ft.
10						
15						
20						
25						

WATER LEVEL DATA

DATE	TIME	ELAPSED TIME (HR)	DEPTH (FT) TO: BOTTOM OF CASING	DEPTH (FT) TO: BOTTOM OF HOLE	DEPTH (FT) TO: WATER

SAMPLE IDENTIFICATION

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon

SUMMARY

OVERBURDEN (LIN FT): 4.0
ROCK CORED (LIN FT): --
SAMPLES: 2S
BORING NO. B248

H&A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists	TEST BORING REPORT	BORING NO. B249

PROJECT: ROTH BROS. SMELTING CORPORATION - PHASE II
CLIENT: NIXON HARGRAVE DEVANS & DOYLE
CONTRACTOR: PARRATT-WOLFF, INC.

FILE NO. 70185-42
SHEET NO. 1 OF 1
LOCATION: See Plan

ITEM	CASING	DRIVE SAMPLER	CORE BARREL
TYPE	---	SS	---
INSIDE DIAMETER (IN)	---	1-3/8	---
HAMMER WEIGHT (LB)	---	140	---
HAMMER FALL (IN)	---	30	---

DRILLING EQUIPMENT & PROCEDURES

RIG TYPE: Mobile B-57, Truck Mounted
BIT TYPE: ---
DRILL MUD: ---
OTHER: ---

ELEVATION:
DATUM:
START: 26 October 1990
FINISH: 26 October 1990
DRILLER: D. Richmond
H&A REP: W. Lanik

DEPTH (FT)	CASING BLOWS PER FT	SAMPLER BLOWS PER 6 IN	SAMPLE NUMBER & RECOVERY	SAMPLE DEPTH (FT)	STRATA CHANGE (FT)	VISUAL CLASSIFICATION AND REMARKS
		9 11 13 14	S1 18"/24"	0.0 2.0	2.0	Medium dense dark brown sandy SILT, trace fine gravel, with ash layer. -FILL-
		14 12 12 14	S2 24"/24"	2.0 4.0		Medium dense red-brown sandy SILT, little to trace gravel. -GLACIAL TILL-
5		12 12 10 9	S3 16"/24"	4.0 6.0		Same, with occasional dark brown layer of organic sandy silt. -GLACIAL TILL-
						Bottom of Boring at 6.0 ft.
10						
15						
20						
25						

WATER LEVEL DATA

DATE	TIME	ELAPSED TIME (HR)	DEPTH (FT) TO: BOTTOM OF CASING	DEPTH (FT) TO: BOTTOM OF HOLE	DEPTH (FT) TO: WATER

SAMPLE IDENTIFICATION

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon

SUMMARY

OVERBURDEN (LIN FT):	6.0
ROCK CORED (LIN FT):	--
SAMPLES:	3S
BORING NO.	B249

H&A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists	TEST BORING REPORT	BORING NO. B250

PROJECT: ROTH BROS. SMELTING CORPORATION - PHASE II
CLIENT: NIXON HARGRAVE DEVANS & DOYLE
CONTRACTOR: PARRATT-WOLFF, INC.

FILE NO. 70185-42
SHEET NO. 1 OF 1
LOCATION: See Plan

ITEM	CASING	DRIVE SAMPLER	CORE BARREL
TYPE	---	SS	---
INSIDE DIAMETER (IN)	---	2-3/8	---
HAMMER WEIGHT (LB)	---	140	---
HAMMER FALL (IN)	---	30	---

DRILLING EQUIPMENT & PROCEDURES

RIG TYPE: Mobile B-57, Truck Mounted
BIT TYPE: ---
DRILL MUD: ---
OTHER: ---

ELEVATION:
DATUM:
START: 29 October 1990
FINISH: 29 October 1990
DRILLER: D. Richmond
H&A REP: W. Lanik

DEPTH (FT)	CASING BLOWS PER FT	SAMPLER BLOWS PER 6 IN	SAMPLE NUMBER & RECOVERY	SAMPLE DEPTH (FT)	STRATA CHANGE (FT)	VISUAL CLASSIFICATION AND REMARKS
0		6 10 24 30	S1 22"/24"	0.0 2.0		Dense dark brown sandy GRAVEL, with wood fragments and trace cinders. Same. -FILL-
		18 2 2 7	S2* 15"/24"	2.0 4.0	2.5	Medium dense red-brown to dark brown mottled SILT, little to trace sand. Same. -LACUSTRINE-
5		3 3 4 8	S3* 24"/24"	4.0 6.0	5.0	Loose light brown fine sandy SILT. -LACUSTRINE-
						Bottom of Boring at 6.0 ft.
10						Notes: *1. Samples obtained with 1-3/8 in. ID split spoon. 2. Sample S1 submitted for chemical analyses.
15						
20						
25						

WATER LEVEL DATA

DATE	TIME	ELAPSED TIME (HR)	DEPTH (FT) TO: BOTTOM OF CASING	DEPTH (FT) TO: BOTTOM OF HOLE	DEPTH (FT) TO: WATER

SAMPLE IDENTIFICATION

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon

SUMMARY

OVERBURDEN (LIN FT):	6.0
ROCK CORED (LIN FT):	--
SAMPLES:	3S
BORING NO.	B250

H&A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists	TEST BORING REPORT	BORING NO. B251

PROJECT: ROTH BROS. SMELTING CORPORATION - PHASE II
CLIENT: NIXON HARGRAVE DEVANS & DOYLE
CONTRACTOR: PARRATT-WOLFF, INC.

FILE NO. 70185-42
SHEET NO. 1 OF 1
LOCATION: See Plan

ITEM	CASING	DRIVE SAMPLER	CORE BARREL
TYPE	Auger	SS	---
INSIDE DIAMETER (IN)	4-1/4	2-3/8	---
HAMMER WEIGHT (LB)	---	140	---
HAMMER FALL (IN)	---	30	---

DRILLING EQUIPMENT & PROCEDURES

RIG TYPE: Mobile B-57, Truck Mounted
BIT TYPE: ---
DRILL MUD: ---
OTHER: ---

ELEVATION:
DATUM:
START: 29 October 1990
FINISH: 29 October 1990
DRILLER: D. Richmond
H&A REP: W. Lanik

DEPTH (FT)	CASING BLOWS PER FT	SAMPLER BLOWS PER 6 IN	SAMPLE NUMBER & RECOVERY	SAMPLE DEPTH (FT)	STRATA CHANGE (FT)	VISUAL CLASSIFICATION AND REMARKS
		17 19 21 30	S1 14"/24"	0.0 2.0		Dense dark brown sandy GRAVEL, with cinders and ash. -FILL-
		17 50	NR	2.0-3.0		No Recovery. -FILL-
5						Bottom of Boring at 3.0 ft.
10						Notes: *1. Sample obtained with 1-3/8 in. ID split spoon. 2. Encountered obstruction from 2.0 ft. to 3.0 ft., auger refusal at 3.0 ft. 3. Sample S1 submitted for chemical analysis.
15						
20						
25						

WATER LEVEL DATA

DATE	TIME	ELAPSED TIME (HR)	DEPTH (FT) TO: BOTTOM OF CASING	DEPTH (FT) TO: BOTTOM OF HOLE	DEPTH (FT) TO: WATER

SAMPLE IDENTIFICATION

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon

SUMMARY

OVERBURDEN (LIN FT): 3.0
ROCK CORED (LIN FT): --
SAMPLES: 2S
BORING NO. B251

H&A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists	TEST BORING REPORT	BORING NO. B252

PROJECT: ROTH BROS. SMELTING CORPORATION - PHASE II
CLIENT: NIXON HARGRAVE DEVANS & DOYLE
CONTRACTOR: PARRATT-WOLFF, INC.

FILE NO. 70185-42
SHEET NO. 1 OF 1
LOCATION: See Plan

ITEM	CASING	DRIVE SAMPLER	CORE BARREL
TYPE	---	SS	---
INSIDE DIAMETER (IN)	---	2-3/8	---
HAMMER WEIGHT (LB)	---	140	---
HAMMER FALL (IN)	---	30	---

DRILLING EQUIPMENT & PROCEDURES

RIG TYPE: Mobile B-57, Truck Mounted
BIT TYPE: ---
DRILL MUD: ---
OTHER: ---

ELEVATION:
DATUM:
START: 29 October 1990
FINISH: 29 October 1990
DRILLER: D. Richmond
H&A REP: W. Lanik

DEPTH (FT)	CASING BLOWS PER FT	SAMPLER BLOWS PER 6 IN	SAMPLE NUMBER & RECOVERY	SAMPLE DEPTH (FT)	STRATA CHANGE (FT)	VISUAL CLASSIFICATION AND REMARKS
		16 20 18 20	S1 21"/24"	0.0 2.0	1.8	Dense dark brown sandy GRAVEL, with cinder fragments and particles, and wood fragments. -FILL-
		7 7 7 10	S2* 20"/24"	2.0 4.0		Medium dense red-brown sandy SILT, little to trace gravel. -FILL-
5		4 4 5 5	NR	4.0 6.0		No Recovery. Dense brown sandy GRAVEL. -FILL-
		20 10 8 8	S3* 8"/24"	6.0 8.0	6.5	Medium dense light brown medium SAND. -LACUSTRINE-
						Bottom of Boring at 8.0 ft.
10						Notes: *1. Sample obtained with 1-3/8 in ID split spoon. 2. Sample S1 submitted for chemical analysis.
15						
20						
25						

WATER LEVEL DATA

DATE	TIME	ELAPSED TIME (HR)	DEPTH (FT) TO: BOTTOM OF CASING	BOTTOM OF HOLE	WATER

SAMPLE IDENTIFICATION

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon

SUMMARY

OVERBURDEN (LIN FT):	8.0
ROCK CORED (LIN FT):	--
SAMPLES:	3S
BORING NO.	B252

H&A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists	TEST BORING REPORT	BORING NO. B253

PROJECT: ROTH BROS. SMELTING CORPORATION - PHASE II
CLIENT: NIXON HARGRAVE DEVANS & DOYLE
CONTRACTOR: PARRATT-WOLFF, INC.

FILE NO. 70185-42
SHEET NO. 1 OF 1
LOCATION: See Plan

ITEM	CASING	DRIVE SAMPLER	CORE BARREL
TYPE	Auger	SS	---
INSIDE DIAMETER (IN)	4-1/4	2-3/8	---
HAMMER WEIGHT (LB)	---	140	---
HAMMER FALL (IN)	---	30	---

DRILLING EQUIPMENT & PROCEDURES

RIG TYPE: Mobile B-57, Truck Mounted
BIT TYPE: ---
DRILL MUD: ---
OTHER: Advanced augers through asphalt to 1.0 ft.

ELEVATION:
DATUM:
START: 29 October 1990
FINISH: 29 October 1990
DRILLER: D. Richmond
H&A REP: W. Lanik

DEPTH (FT)	CASING BLOWS PER FT	SAMPLER BLOWS PER 6 IN	SAMPLE NUMBER & RECOVERY	SAMPLE DEPTH (FT)	STRATA CHANGE (FT)	VISUAL CLASSIFICATION AND REMARKS
						-ASPHALT WITH SUB-BASE-
		13 13 14 15	S1 22"/24"	1.0 3.0	1.2	Medium dense red-brown to brown mottled sandy SILT, trace gravel. -GLACIAL TILL-
		6 7 6 7	S2* 12"/24"	3.0 5.0		Same.
5		4 5 7 7	S3* 24"/24"	5.0 7.0		Same. -GLACIAL TILL-
						Bottom of Boring at 7.0 ft.
10						Notes: *1. Sample obtained with 1-3/8 in. ID split spoon. 2. Sample S1 submitted for chemical analysis.
15						
20						
25						

WATER LEVEL DATA

DATE	TIME	ELAPSED TIME (HR)	DEPTH (FT) TO: BOTTOM OF CASING	DEPTH (FT) TO: BOTTOM OF HOLE	DEPTH (FT) TO: WATER

SAMPLE IDENTIFICATION

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon

SUMMARY

OVERBURDEN (LIN FT): 7.0
ROCK CORED (LIN FT): --
SAMPLES: 3S
BORING NO. B253

H&A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists	TEST BORING REPORT	BORING NO. B254

PROJECT: ROTH BROS. SMELTING CORPORATION - PHASE II
CLIENT: NIXON HARGRAVE DEVANS & DOYLE
CONTRACTOR: PARRATT-WOLFF, INC.

FILE NO. 70185-42
SHEET NO. 1 OF 1
LOCATION: See Plan

ITEM	CASING	DRIVE SAMPLER	CORE BARREL
TYPE	Auger	SS	---
INSIDE DIAMETER (IN)	4-1/4	1-3/8	---
HAMMER WEIGHT (LB)	---	140	---
HAMMER FALL (IN)	---	30	---

DRILLING EQUIPMENT & PROCEDURES

RIG TYPE: Mobile B-57, Truck Mounted
BIT TYPE: ---
DRILL MUD: ---
OTHER: Advanced augers through asphalt to 1.0 ft.

ELEVATION:
DATUM:
START: 30 October 1990
FINISH: 30 October 1990
DRILLER: D. Richmond
H&A REP: W. Lanik

DEPTH (FT)	CASING BLOWS PER FT	SAMPLER BLOWS PER 6 IN	SAMPLE NUMBER & RECOVERY	SAMPLE DEPTH (FT)	STRATA CHANGE (FT)	VISUAL CLASSIFICATION AND REMARKS
						-ASPHALT WITH SUB-BASE-
		40 23 30 17	S1 20"/24"	1.0 3.0	1.4	Very dense red-brown mottled sandy SILT, trace gravel.
		25 24 15 15	S2 10"/24"	3.0 5.0		Same. -GLACIAL TILL-
5						Bottom of Boring at 5.0 ft.
						Note: 1. Samples S1 and S2 submitted for chemical analysis.
10						
15						
20						
25						

WATER LEVEL DATA

DATE	TIME	ELAPSED TIME (HR)	DEPTH (FT) TO: BOTTOM OF CASING	BOTTOM OF HOLE	WATER

SAMPLE IDENTIFICATION

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon

SUMMARY

OVERBURDEN (LIN FT): 5.0
ROCK CORED (LIN FT): --
SAMPLES: 2S
BORING NO. B254

H&A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists	TEST BORING REPORT	BORING NO. B255

PROJECT: ROTH BROS. SMELTING CORPORATION - PHASE II
CLIENT: NIXON HARGRAVE DEVANS & DOYLE
CONTRACTOR: PARRATT-WOLFF, INC.

FILE NO. 70185-42
SHEET NO. 1 OF 1
LOCATION: See Plan

ITEM	CASING	DRIVE SAMPLER	CORE BARREL
TYPE	Auger	SS	---
INSIDE DIAMETER (IN)	4-1/4	1-3/8	---
HAMMER WEIGHT (LB)	---	140	---
HAMMER FALL (IN)	---	30	---

DRILLING EQUIPMENT & PROCEDURES

RIG TYPE: Mobile B-57, Truck Mounted
BIT TYPE: ---
DRILL MUD: ---
OTHER: Advanced augers through asphalt to 1.0 ft.

ELEVATION:
DATUM:
START: 29 October 1990
FINISH: 29 October 1990
DRILLER: D. Richmond
H&A REP: W. Lanik

DEPTH (FT)	CASING BLOWS PER FT	SAMPLER BLOWS PER 6 IN	SAMPLE NUMBER & RECOVERY	SAMPLE DEPTH (FT)	STRATA CHANGE (FT)	VISUAL CLASSIFICATION AND REMARKS
					1.0	-ASPHALT WITH SUB-BASE-
		8 20 25 19	S1 15"/24"	1.0 3.0		Dense red-brown sandy SILT, trace gravel. -GLACIAL TILL- Bottom of Boring at 3.0 ft.
5						
10						
15						
20						
25						

WATER LEVEL DATA

DATE	TIME	ELAPSED TIME (HR)	DEPTH (FT) TO: BOTTOM OF CASING	BOTTOM OF HOLE	WATER

SAMPLE IDENTIFICATION

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon

SUMMARY

OVERBURDEN (LIN FT): 3.0
ROCK CORED (LIN FT): --
SAMPLES: 1S

BORING NO. B255

H&A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists	TEST BORING REPORT	BORING NO. B256

PROJECT: ROTH BROS. SMELTING CORPORATION - PHASE II
CLIENT: NIXON HARGRAVE DEVANS & DOYLE
CONTRACTOR: PARRATT-WOLFF, INC.

FILE NO. 70185-42
SHEET NO. 1 OF 1
LOCATION: See Plan

ITEM	CASING	DRIVE SAMPLER	CORE BARREL
TYPE	Auger	SS	---
INSIDE DIAMETER (IN)	4-1/4	1-3/8	---
HAMMER WEIGHT (LB)	---	140	---
HAMMER FALL (IN)	---	30	---

DRILLING EQUIPMENT & PROCEDURES

RIG TYPE: Mobile B-57, Truck Mounted
BIT TYPE: ---
DRILL MUD: ---
OTHER: Advanced augers through asphalt to 1.0 ft.

ELEVATION:
DATUM:
START: 30 October 1990
FINISH: 30 October 1990
DRILLER: D. Richmond
H&A REP: W. Lanik

DEPTH (FT)	CASING BLOWS PER FT	SAMPLER BLOWS PER 6 IN	SAMPLE NUMBER & RECOVERY	SAMPLE DEPTH (FT)	STRATA CHANGE (FT)	VISUAL CLASSIFICATION AND REMARKS
						-ASPHALT WITH SUB-BASE-
		12 11 8 8	S1 24"/24"	1.0 3.0	1.2	Medium dense dark brown to red-brown mottled sandy SILT, trace gravel, trace organics. Same. -FILL-
		14 12 8 8	S2 4"/24"	3.0 5.0	4.0	
5		4 5 6 6	NR	5.0 7.0		No Recovery. Medium dense dark brown silty GRAVEL, trace metal fragments, wet. -FILL-
		8 8 8 7	S4A - - - S4B 22"/24"	7.0-7.8 - - - 7.8 9.0	7.8	Medium dense light brown medium to fine SAND, with layer of coarse medium sand from 8.5 to 9.0 ft. -LACUSTRINE-
10						Bottom of Boring at 9.0 ft.
15						
20						
25						

WATER LEVEL DATA

DATE	TIME	ELAPSED TIME (HR)	DEPTH (FT) TO: BOTTOM OF CASING	DEPTH (FT) TO: BOTTOM OF HOLE	DEPTH (FT) TO: WATER

SAMPLE IDENTIFICATION

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon

SUMMARY

OVERBURDEN (LIN FT):	9.0
ROCK CORED (LIN FT):	--
SAMPLES:	4S
BORING NO.	B256

H&A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists	TEST BORING REPORT	BORING NO. B257

PROJECT: ROTH BROS. SMELTING CORPORATION - PHASE II
CLIENT: NIXON HARGRAVE DEVANS & DOYLE
CONTRACTOR: PARRATT-WOLFF, INC.

FILE NO. 70185-42
SHEET NO. 1 OF 1
LOCATION: See Plan

ITEM	CASING	DRIVE SAMPLER	CORE BARREL
TYPE	Auger	SS	---
INSIDE DIAMETER (IN)	4-1/4	1-3/8	---
HAMMER WEIGHT (LB)	---	140	---
HAMMER FALL (IN)	---	30	---

DRILLING EQUIPMENT & PROCEDURES

RIG TYPE: Mobile B-57, Truck Mounted
BIT TYPE: ---
DRILL MUD: ---
OTHER: Advanced augers through asphalt to 1.0 ft.

ELEVATION:
DATUM:
START: 30 October 1990
FINISH: 30 October 1990
DRILLER: D. Richmond
H&A REP: W. Lanik

DEPTH (FT)	CASING BLOWS PER FT	SAMPLER BLOWS PER 6 IN	SAMPLE NUMBER & RECOVERY	SAMPLE DEPTH (FT)	STRATA CHANGE (FT)	VISUAL CLASSIFICATION AND REMARKS
						-ASPHALT WITH SUB-BASE-
		13	S1	1.0	1.3	Medium dense gray-brown sandy GRAVEL.
		15				Medium dense red-brown mottled sandy SILT, trace GRAVEL.
		10	21"/24"	3.0		-GLACIAL TILL-
		10				Bottom of Boring at 3.0 ft.

5
10
15
20
25

WATER LEVEL DATA

DATE	TIME	ELAPSED TIME (HR)	DEPTH (FT) TO: BOTTOM OF CASING	DEPTH (FT) TO: BOTTOM OF HOLE	DEPTH (FT) TO: WATER

SAMPLE IDENTIFICATION

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon

SUMMARY

OVERBURDEN (LIN FT): 3.0
ROCK CORED (LIN FT): --
SAMPLES: 1S
BORING NO. B257

H&A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists	TEST BORING REPORT	BORING NO. B258

PROJECT: ROTH BROS. SMELTING CORPORATION - PHASE II
CLIENT: NIXON HARGRAVE DEVANS & DOYLE
CONTRACTOR: PARRATT-WOLFF, INC.

FILE NO. 70185-42
SHEET NO. 1 OF 1
LOCATION: See Plan

ITEM	CASING	DRIVE SAMPLER	CORE BARREL
TYPE	Auger	SS	---
INSIDE DIAMETER (IN)	4-1/4	1-3/8	---
HAMMER WEIGHT (LB)	---	140	---
HAMMER FALL (IN)	---	30	---

DRILLING EQUIPMENT & PROCEDURES

RIG TYPE: Mobile B-57, Truck Mounted
BIT TYPE: ---
DRILL MUD: ---
OTHER: Advanced augers through asphalt to 1.0 ft.

ELEVATION:
DATUM:
START: 30 October 1990
FINISH: 30 October 1990
DRILLER: D. Richmond
H&A REP: W. Lanik

DEPTH (FT)	CASING BLOWS PER FT	SAMPLER BLOWS PER 6 IN	SAMPLE NUMBER & RECOVERY	SAMPLE DEPTH (FT)	STRATA CHANGE (FT)	VISUAL CLASSIFICATION AND REMARKS
						-ASPHALT WITH SUB-BASE-
		17 12 11 7	S1 24"/24"	1.0 3.0	1.4 2.3	Medium dense gray-brown sandy GRAVEL. Medium dense red-brown mottled sandy SILT, trace gravel. -FILL-
		8 9 6 16	S2 8"/24"	3.0 5.0	3.4	Medium dense dark brown sandy SILT, little organics. Same. -BURIED TOPSOIL-
5		4 9 18 15	S3 12"/24"	5.0 7.0		Medium dense red brown sandy SILT, trace gravel. Same. -GLACIAL TILL-
		12 10 9 9	S4 14"/24"	7.0 9.0		Same. -GLACIAL TILL-
10						Bottom of Boring at 9.0 ft.
15						
20						
25						

WATER LEVEL DATA

DATE	TIME	ELAPSED TIME (HR)	DEPTH (FT) TO: BOTTOM OF CASING	BOTTOM OF HOLE	WATER

SAMPLE IDENTIFICATION

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon

SUMMARY

OVERBURDEN (LIN FT):	9.0
ROCK CORED (LIN FT):	--
SAMPLES:	4S
BORING NO.	B258

H&A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists	TEST BORING REPORT	BORING NO. B259

PROJECT: ROTH BROS. SMELTING CORPORATION - PHASE II
CLIENT: NIXON HARGRAVE DEVANS & DOYLE
CONTRACTOR: PARRATT-WOLFF, INC.

FILE NO. 70185-42
SHEET NO. 1 OF 1
LOCATION: See Plan

ITEM	CASING	DRIVE SAMPLER	CORE BARREL
TYPE	Auger	SS	---
INSIDE DIAMETER (IN)	4-1/4	1-3/8	---
HAMMER WEIGHT (LB)	---	140	---
HAMMER FALL (IN)	---	30	---

DRILLING EQUIPMENT & PROCEDURES

RIG TYPE: Mobile B-57, Truck Mounted
BIT TYPE: ---
DRILL MUD: ---
OTHER: Advanced augers through asphalt to 1.0 ft.

ELEVATION:
DATUM:
START: 30 October 1990
FINISH: 30 October 1990
DRILLER: D. Richmond
H&A REP: W. Lanik

DEPTH (FT)	CASING BLOWS PER FT	SAMPLER BLOWS PER 6 IN	SAMPLE NUMBER & RECOVERY	SAMPLE DEPTH (FT)	STRATA CHANGE (FT)	VISUAL CLASSIFICATION AND REMARKS
					1.0	-ASPHALT WITH SUB-BASE-
		18 29 30 38	S1 10"/24"	1.0 3.0		Very dense red-brown mottled sandy SILT, trace gravel. -FILL-
		8 7 5 5	S2 24"/24"	3.0 5.0	3.0	Medium dense dark brown sandy SILT, little organics, with layer of brown medium to fine sand, trace gravel from 4.5 to 5.0 ft. -LACUSTRINE-
5						Bottom of Boring at 5.0 ft.
10						
15						
20						
25						

WATER LEVEL DATA

DATE	TIME	ELAPSED TIME (HR)	DEPTH (FT) TO: BOTTOM OF CASING	BOTTOM OF HOLE	WATER

SAMPLE IDENTIFICATION

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon

SUMMARY

OVERBURDEN (LIN FT): 5.0
ROCK CORED (LIN FT): --
SAMPLES: 2S
BORING NO. B259

H&A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists	TEST BORING REPORT	BORING NO. B260

PROJECT: ROTH BROS. SMELTING CORPORATION - PHASE II
CLIENT: NIXON HARGRAVE DEVANS & DOYLE
CONTRACTOR: PARRATT-WOLFF, INC.

FILE NO. 70185-42
SHEET NO. 1 OF 1
LOCATION: See Plan

ITEM	CASING	DRIVE SAMPLER	CORE BARREL
TYPE	Auger	SS	---
INSIDE DIAMETER (IN)	4-1/4	2-3/8	---
HAMMER WEIGHT (LB)	---	140	---
HAMMER FALL (IN)	---	30	---

DRILLING EQUIPMENT & PROCEDURES

RIG TYPE: Mobile B-57, Truck Mounted
BIT TYPE: ---
DRILL MUD: ---
OTHER: Advanced augers through asphalt to 1.0 ft.

ELEVATION:
DATUM:
START: 30 October 1990
FINISH: 30 October 1990
DRILLER: D. Richmond
H&A REP: W. Lanik

DEPTH (FT)	CASING BLOWS PER FT	SAMPLER BLOWS PER 6 IN	SAMPLE NUMBER & RECOVERY	SAMPLE DEPTH (FT)	STRATA CHANGE (FT)	VISUAL CLASSIFICATION AND REMARKS
					1.0	-ASPHALT WITH SUB-BASE-
		49 32 16 17	S1 17"/24"	1.0 3.0	2.0	Dense red-brown sandy SILT, little to trace gravel. -FILL-
		4 5 6 7	S2 18"/24"	3.0 5.0		Medium dense dark brown sandy SILT, little organics. -LACUSTRINE- Same. -LACUSTRINE-
5		3 4 3 5	S3* 8"/24"	5.0 7.0	5.1	Loose brown coarse to fine SAND, trace gravel. -LACUSTRINE-
						Bottom of Boring at 7.0 ft.
10						Notes: *1. Sample obtained with 1-3/8 in. ID split spoon. 2. Sample S1 submitted for chemical analysis.
15						
20						
25						

WATER LEVEL DATA

DATE	TIME	ELAPSED TIME (HR)	DEPTH (FT) TO: BOTTOM OF CASING	DEPTH (FT) TO: BOTTOM OF HOLE	DEPTH (FT) TO: WATER

SAMPLE IDENTIFICATION

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon

SUMMARY

OVERBURDEN (LIN FT):	7.0
ROCK CORED (LIN FT):	--
SAMPLES:	3S
BORING NO.	B260

H&A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists	TEST BORING REPORT	BORING NO. B261

PROJECT: ROTH BROS. SMELTING CORPORATION - PHASE II
CLIENT: NIXON HARGRAVE DEVANS & DOYLE
CONTRACTOR: PARRATT-WOLFF, INC.

FILE NO. 70185-42
SHEET NO. 1 OF 1
LOCATION: See Plan

ITEM	CASING	DRIVE SAMPLER	CORE BARREL
TYPE	Auger	SS	---
INSIDE DIAMETER (IN)	4-1/4	1-3/8	---
HAMMER WEIGHT (LB)	---	140	---
HAMMER FALL (IN)	---	30	---

DRILLING EQUIPMENT & PROCEDURES

RIG TYPE: Mobile B-57, Truck Mounted
BIT TYPE: ---
DRILL MUD: ---
OTHER: Advanced augers through asphalt to 1.0 ft.

ELEVATION:
DATUM:
START: 30 October 1990
FINISH: 30 October 1990
DRILLER: D. Richmond
H&A REP: W. Lanik

DEPTH (FT)	CASING BLOWS PER FT	SAMPLER BLOWS PER 6 IN	SAMPLE NUMBER & RECOVERY	SAMPLE DEPTH (FT)	STRATA CHANGE (FT)	VISUAL CLASSIFICATION AND REMARKS
					1.0	-ASPHALT WITH SUB-BASE-
		11 14 15 14	S1 22"/24"	1.0 3.0	2.0	Medium dense red-brown sandy SILT, trace gravel. -FILL-
		8 6 8 11	S2 5"/24"	3.0 5.0		Medium dense dark brown to brown coarse to fine SAND, little to trace silt, trace gravel, with organics. -LACUSTRINE-
5						Bottom of Boring at 5.0 ft.
10						
15						
20						
25						

WATER LEVEL DATA

DATE	TIME	ELAPSED TIME (HR)	DEPTH (FT) TO: BOTTOM OF CASING	BOTTOM OF HOLE	WATER

SAMPLE IDENTIFICATION

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon

SUMMARY

OVERBURDEN (LIN FT): 5.0
ROCK CORED (LIN FT): --
SAMPLES: 2S
BORING NO. B261

H&A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists	TEST BORING REPORT	BORING NO. B262

PROJECT: ROTH BROS. SMELTING CORPORATION - PHASE II
CLIENT: NIXON HARGRAVE DEVANS & DOYLE
CONTRACTOR: PARRATT-WOLFF, INC.

FILE NO. 70185-42
SHEET NO. 1 OF 1
LOCATION: See Plan

ITEM	CASING	DRIVE SAMPLER	CORE BARREL
TYPE	Auger	SS	---
INSIDE DIAMETER (IN)	4-1/4	1-3/8	---
HAMMER WEIGHT (LB)	---	140	---
HAMMER FALL (IN)	---	30	---

DRILLING EQUIPMENT & PROCEDURES

RIG TYPE: Mobile B-57, Truck Mounted
BIT TYPE: ---
DRILL MUD: ---
OTHER: Advanced augers through concrete pad to 0.5 ft.

ELEVATION:
DATUM:
START: 30 October 1990
FINISH: 30 October 1990
DRILLER: D. Richmond
H&A REP: W. Lanik

DEPTH (FT)	CASING BLOWS PER FT	SAMPLER BLOWS PER 6 IN	SAMPLE NUMBER & RECOVERY	SAMPLE DEPTH (FT)	STRATA CHANGE (FT)	VISUAL CLASSIFICATION AND REMARKS
					0.5	-CONCRETE PAD-
		5 6 5 6	S1 12"/24"	0.5 2.5	2.1	Medium dense red-brown sandy SILT, trace gravel. -FILL- Medium dense dark brown sandy SILT, with trace organics. -BURIED TOPSOIL- Bottom of Boring at 2.5 ft.

5
10
15
20
25

WATER LEVEL DATA

DATE	TIME	ELAPSED TIME (HR)	DEPTH (FT) TO: BOTTOM OF CASING	BOTTOM OF HOLE	WATER

SAMPLE IDENTIFICATION

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon

SUMMARY

OVERBURDEN (LIN FT): 2.5
ROCK CORED (LIN FT): --
SAMPLES: 1S
BORING NO. B262

H&A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists	TEST BORING REPORT	BORING NO. B263

PROJECT: ROTH BROS. SMELTING CORPORATION - PHASE II
CLIENT: NIXON HARGRAVE DEVANS & DOYLE
CONTRACTOR: PARRATT-WOLFF, INC.

FILE NO. 70185-42
SHEET NO. 1 OF 1
LOCATION: See Plan

ITEM	CASING	DRIVE SAMPLER	CORE BARREL
TYPE	Auger	SS	---
INSIDE DIAMETER (IN)	4-1/4	2-3/8	---
HAMMER WEIGHT (LB)	---	140	---
HAMMER FALL (IN)	---	30	---

DRILLING EQUIPMENT & PROCEDURES

RIG TYPE: Mobile B-57, Truck Mounted
BIT TYPE: ---
DRILL MUD: ---
OTHER: Advanced augers through concrete pad to 1.0 ft.

ELEVATION:
DATUM:
START: 30 October 1990
FINISH: 30 October 1990
DRILLER: D. Richmond
H&A REP: W. Lanik

DEPTH (FT)	CASING BLOWS PER FT	SAMPLER BLOWS PER 6 IN	SAMPLE NUMBER & RECOVERY	SAMPLE DEPTH (FT)	STRATA CHANGE (FT)	VISUAL CLASSIFICATION AND REMARKS
					1.0	-CONCRETE PAD-
		8	S1	1.0	1.5	Medium dense brown sandy SILT, little to trace gravel. -FILL-
		7 10 10	22"/24"	3.0	3.0	Medium dense dark brown sandy SILT, with trace organics. -BURIED SOIL-
		7	S2	3.0		
		4 3 3	13"/24"	5.0		Very loose brown coarse to fine SAND. -LACUSTRINE-
5						Bottom of Boring at 5.0 ft.
10						Note:
						*1. Samples S1 and S2 submitted for chemical analysis.
15						
20						
25						

WATER LEVEL DATA

DATE	TIME	ELAPSED TIME (HR)	DEPTH (FT) TO: BOTTOM OF CASING	DEPTH (FT) TO: BOTTOM OF HOLE	DEPTH (FT) TO: WATER

SAMPLE IDENTIFICATION

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon

SUMMARY

OVERBURDEN (LIN FT):	5.0
ROCK CORED (LIN FT):	--
SAMPLES:	2S
BORING NO.	B263

H&A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists	TEST BORING REPORT	BORING NO. B264

PROJECT: ROTH BROS. SMELTING CORPORATION - PHASE II
CLIENT: NIXON HARGRAVE DEVANS & DOYLE
CONTRACTOR: PARRATT-WOLFF, INC.

FILE NO. 70185-42
SHEET NO. 1 OF 1
LOCATION: See Plan

ITEM	CASING	DRIVE SAMPLER	CORE BARREL
TYPE	Auger	SS	---
INSIDE DIAMETER (IN)	4-1/4	2-3/8	---
HAMMER WEIGHT (LB)	---	140	---
HAMMER FALL (IN)	---	30	---

DRILLING EQUIPMENT & PROCEDURES

RIG TYPE: Mobile B-57, Truck Mounted
BIT TYPE: ---
DRILL MUD: ---
OTHER: Advanced augers through asphalt to 0.5 ft.

ELEVATION:
DATUM:
START: 30 October 1990
FINISH: 30 October 1990
DRILLER: D. Richmond
H&A REP: W. Lanik

DEPTH (FT)	CASING BLOWS PER FT	SAMPLER BLOWS PER 6 IN	SAMPLE NUMBER & RECOVERY	SAMPLE DEPTH (FT)	STRATA CHANGE (FT)	VISUAL CLASSIFICATION AND REMARKS
					0.5	-ASPHALT WITH SUB-BASE-
		12 14 16 30	S1 24"/24"	0.5 2.5	1.8	Medium dense red-brown sandy SILT, trace gravel, with layer of black ash from 1.1 to 1.5 ft. -FILL- Dense light brown coarse to medium SAND. -LACUSTRINE-
5						Bottom of Boring at 2.5 ft.
10						Note: *1. Sample S1 submitted for chemical analysis.
15						
20						
25						

WATER LEVEL DATA

DATE	TIME	ELAPSED TIME (HR)	DEPTH (FT) TO: BOTTOM OF CASING	DEPTH (FT) TO: BOTTOM OF HOLE	DEPTH (FT) TO: WATER

SAMPLE IDENTIFICATION

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon

SUMMARY

OVERBURDEN (LIN FT): 2.5
ROCK CORED (LIN FT): --
SAMPLES: 1S

BORING NO. FOIL B264700

H&A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists	TEST BORING REPORT	BORING NO. B265

PROJECT: ROTH BROS. SMELTING CORPORATION - PHASE II
CLIENT: NIXON HARGRAVE DEVANS & DOYLE
CONTRACTOR: PARRATT-WOLFF, INC.

FILE NO. 70185-42
SHEET NO. 1 OF 1
LOCATION: See Plan

ITEM	CASING	DRIVE SAMPLER	CORE BARREL
TYPE	Auger	SS	---
INSIDE DIAMETER (IN)	4-1/4	2-3/8	---
HAMMER WEIGHT (LB)	---	140	---
HAMMER FALL (IN)	---	30	---

DRILLING EQUIPMENT & PROCEDURES

RIG TYPE: Mobile B-57, Truck Mounted
BIT TYPE: ---
DRILL MUD: ---
OTHER: Advanced augers through concrete pad to 0.5 ft.

ELEVATION:
DATUM:
START: 30 October 1990
FINISH: 30 October 1990
DRILLER: D. Richmond
H&A REP: W. Lanik

DEPTH (FT)	CASING BLOWS PER FT	SAMPLER BLOWS PER 6 IN	SAMPLE NUMBER & RECOVERY	SAMPLE DEPTH (FT)	STRATA CHANGE (FT)	VISUAL CLASSIFICATION AND REMARKS
					0.5	-CONCRETE PAD-
		13 16 10 10	S1 24"/24"	0.5 2.5	2.3	Medium dense brown to dark brown mottled sandy SILT, trace gravel. -FILL-
		2 3 4 4	S2* 12"/24"	2.5 4.5		Loose dark brown organic sandy SILT, little organics. -LACUSTRINE-
5		6 5 5 8	S3* 12"/24"	4.5 6.5		Loose brown medium to fine SAND, trace coarse sand. -LACUSTRINE-
						Bottom of Boring at 6.5 ft.
10						Notes: *1. Sample obtained with 1-3/8 in. ID. split spoon. 2. Sample S1 submitted for chemical analysis.
15						
20						
25						

WATER LEVEL DATA

DATE	TIME	ELAPSED TIME (HR)	DEPTH (FT) TO: BOTTOM OF CASING	DEPTH (FT) TO: BOTTOM OF HOLE	DEPTH (FT) TO: WATER

SAMPLE IDENTIFICATION

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon

SUMMARY

OVERBURDEN (LIN FT): 6.5
ROCK CORED (LIN FT): --
SAMPLES: 3S

BORING NO. B265

H&A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists	TEST BORING REPORT	BORING NO. B266

PROJECT: ROTH BROS. SMELTING CORPORATION - PHASE II
CLIENT: NIXON HARGRAVE DEVANS & DOYLE
CONTRACTOR: PARRATT-WOLFF, INC.

FILE NO. 70185-42
SHEET NO. 1 OF 1
LOCATION: See Plan

ITEM	CASING	DRIVE SAMPLER	CORE BARREL
TYPE	Auger	SS	---
INSIDE DIAMETER (IN)	4-1/4	2-3/8	---
HAMMER WEIGHT (LB)	---	140	---
HAMMER FALL (IN)	---	30	---

DRILLING EQUIPMENT & PROCEDURES

RIG TYPE: Mobile B-57, Truck Mounted
BIT TYPE: ---
DRILL MUD: ---
OTHER: Advanced augers through concrete pad to 0.5 ft.

ELEVATION:
DATUM:
START: 30 October 1990
FINISH: 30 October 1990
DRILLER: D. Richmond
H&A REP: W. Lanik

DEPTH (FT)	CASING BLOWS PER FT	SAMPLER BLOWS PER 6 IN	SAMPLE NUMBER & RECOVERY	SAMPLE DEPTH (FT)	STRATA CHANGE (FT)	VISUAL CLASSIFICATION AND REMARKS
					0.5	-CONCRETE PAD-
		8 6 6 4	S1 18"/24"	0.5 2.5	1.3	Loose gray-brown gravelly coarse to fine SAND. -FILL- Loose light brown to dark brown mottled silty fine SAND, little to trace gravel, trace organics. -LACUSTRINE-
						Bottom of Boring at 2.5 ft.

Note:

1. Sample S1 submitted for chemical analysis.

WATER LEVEL DATA					
DATE	TIME	ELAPSED TIME (HR)	DEPTH (FT) TO: BOTTOM OF CASING	BOTTOM OF HOLE	WATER

SAMPLE IDENTIFICATION

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon

SUMMARY

OVERBURDEN (LIN FT): 2.5
ROCK CORED (LIN FT): --
SAMPLES: 1S

BORING NO. B266

H&A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists	TEST BORING REPORT	BORING NO. B267

PROJECT: ROTH BROS. SMELTING CORPORATION - PHASE II
CLIENT: NIXON HARGRAVE DEVANS & DOYLE
CONTRACTOR: PARRATT-WOLFF, INC.

FILE NO. 70185-42
SHEET NO. 1 OF 1
LOCATION: See Plan

ITEM	CASING	DRIVE SAMPLER	CORE BARREL
TYPE	Auger	SS	---
INSIDE DIAMETER (IN)	4-1/4	1-3/8	---
HAMMER WEIGHT (LB)	---	140	---
HAMMER FALL (IN)	---	30	---

DRILLING EQUIPMENT & PROCEDURES

RIG TYPE: Mobile B-57, Truck Mounted
BIT TYPE: ---
DRILL MUD: ---
OTHER: Advanced augers through asphalt to 0.5 ft.

ELEVATION:
DATUM:
START: 30 October 1990
FINISH: 30 October 1990
DRILLER: D. Richmond
H&A REP: W. Lanik

DEPTH (FT)	CASING BLOWS PER FT	SAMPLER BLOWS PER 6 IN	SAMPLE NUMBER & RECOVERY	SAMPLE DEPTH (FT)	STRATA CHANGE (FT)	VISUAL CLASSIFICATION AND REMARKS
					0.5	-ASPHALT WITH SUB-BASE-
		2 2 3 3	S1 24"/24"	0.5 2.5		Loose dark brown sandy SILT, little organics, grading into light brown fine SAND at 2.0 ft. -LACUSTRINE-
		6 10 12 8	S2 17"/24"	2.5 4.5		Medium dense brown coarse to fine SAND, trace gravel. -LACUSTRINE-
5						Bottom of Boring at 4.5 ft.
10						
15						
20						
25						

WATER LEVEL DATA

DATE	TIME	ELAPSED TIME (HR)	DEPTH (FT) TO: BOTTOM OF CASING	DEPTH (FT) TO: BOTTOM OF HOLE	DEPTH (FT) TO: WATER

SAMPLE IDENTIFICATION

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon

SUMMARY

OVERBURDEN (LIN FT): 4.5
ROCK CORED (LIN FT): --
SAMPLES: 2S
BORING NO. B267

H&A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists	TEST BORING REPORT	BORING NO. B268

PROJECT: ROTH BROS. SMELTING CORPORATION - PHASE II
CLIENT: NIXON HARGRAVE DEVANS & DOYLE
CONTRACTOR: PARRATT-WOLFF, INC.

FILE NO. 70185-42
SHEET NO. 1 OF 1
LOCATION: See Plan

ITEM	CASING	DRIVE SAMPLER	CORE BARREL
TYPE	Auger	SS	---
INSIDE DIAMETER (IN)	4-1/4	2-3/8	---
HAMMER WEIGHT (LB)	---	140	---
HAMMER FALL (IN)	---	30	---

DRILLING EQUIPMENT & PROCEDURES

RIG TYPE: Mobile B-57, Truck Mounted
BIT TYPE: ---
DRILL MUD: ---
OTHER: Advanced augers through concrete pad to 0.5 ft.

ELEVATION:
DATUM:
START: 30 October 1990
FINISH: 30 October 1990
DRILLER: D. Richmond
H&A REP: W. Lanik

DEPTH (FT)	CASING BLOWS PER FT	SAMPLER BLOWS PER 6 IN	SAMPLE NUMBER & RECOVERY	SAMPLE DEPTH (FT)	STRATA CHANGE (FT)	VISUAL CLASSIFICATION AND REMARKS
					0.2	-CONCRETE PAD-
		13 20 31 21	S1 20"/24"	0.5 2.5		Very dense red-brown sandy SILT, trace gravel. Same. -FILL-
		2 3 4 4	S2* 23"/24"	2.5 4.5	3.0	Loose light brown fine SAND, with layer of dark brown silt, little organics from 3.0 to 3.5 ft. -LACUSTRINE-
5						Bottom of Boring at 4.5 ft.
10						
15						
20						
25						

Notes:

*1. Sample obtained with 1-3/8 in. I.D. split spoon.

2. Sample S1 submitted for chemical analysis.

WATER LEVEL DATA					
DATE	TIME	ELAPSED TIME (HR)	DEPTH (FT) TO: BOTTOM OF CASING	DEPTH (FT) TO: BOTTOM OF HOLE	DEPTH (FT) TO: WATER

SAMPLE IDENTIFICATION

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon

SUMMARY

OVERBURDEN (LIN FT): 4.5
ROCK CORED (LIN FT): --
SAMPLES: 2S

BORING NO. B268

H&A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists	TEST BORING REPORT	BORING NO. B269

PROJECT: ROTH BROS. SMELTING CORPORATION - PHASE II
CLIENT: NIXON HARGRAVE DEVANS & DOYLE
CONTRACTOR: PARRATT-WOLFF, INC.

FILE NO. 70185-42
SHEET NO. 1 OF 1
LOCATION: See Plan

ITEM	CASING	DRIVE SAMPLER	CORE BARREL
TYPE	Auger	SS	---
INSIDE DIAMETER (IN)	4-1/4	2-3/8	---
HAMMER WEIGHT (LB)	---	140	---
HAMMER FALL (IN)	---	30	---

DRILLING EQUIPMENT & PROCEDURES

RIG TYPE: Mobile B-57, Truck Mounted
BIT TYPE: ---
DRILL MUD: ---
OTHER: Advanced augers through concrete pad to 0.5 ft.

ELEVATION:
DATUM:
START: 30 October 1990
FINISH: 30 October 1990
DRILLER: D. Richmond
H&A REP: W. Lanik

DEPTH (FT)	CASING BLOWS PER FT	SAMPLER BLOWS PER 6 IN	SAMPLE NUMBER & RECOVERY	SAMPLE DEPTH (FT)	STRATA CHANGE (FT)	VISUAL CLASSIFICATION AND REMARKS
					0.5	-CONCRETE PAD-
		27 18 11 10	S1 20"/24"	0.5 2.5	2.4	Medium dense brown sandy SILT, trace gravel. -FILL-
		2 2 2 2	NR	2.5 4.5		No Recovery.
5		7 7 6 8	S3* 24"/24"	4.5 6.5		Medium dense dark brown SILT, little organics, grading into light brown coarse to fine sandy SILT, trace gravel at 5.2 ft. -LACUSTRINE-
						Bottom of Boring at 6.5 ft.
10						Notes: *1. Sample obtained with 1-3/8 in. I.D. split spoon. 2. Sample S1 submitted for chemical analysis.
15						
20						
25						

WATER LEVEL DATA

DATE	TIME	ELAPSED TIME (HR)	DEPTH (FT) TO: BOTTOM OF CASING	DEPTH (FT) TO: BOTTOM OF HOLE	DEPTH (FT) TO: WATER

SAMPLE IDENTIFICATION

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon

SUMMARY

OVERBURDEN (LIN FT):	6.5
ROCK CORED (LIN FT):	--
SAMPLES:	3S
BORING NO.	B269

H&A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists	TEST BORING REPORT	BORING NO. B270

PROJECT: ROTH BROS. SMELTING CORPORATION - PHASE II
CLIENT: NIXON HARGRAVE DEVANS & DOYLE
CONTRACTOR: PARRATT-WOLFF, INC.

FILE NO. 70185-42
SHEET NO. 1 OF 1
LOCATION: See Plan

ITEM	CASING	DRIVE SAMPLER	CORE BARREL
TYPE	Auger	SS	---
INSIDE DIAMETER (IN)	4-1/4	1-3/8	---
HAMMER WEIGHT (LB)	---	140	---
HAMMER FALL (IN)	---	30	---

DRILLING EQUIPMENT & PROCEDURES

RIG TYPE: Mobile B-57, Truck Mounted
BIT TYPE: ---
DRILL MUD: ---
OTHER: Advanced augers through concrete pad to 1.0 ft.

ELEVATION:
DATUM:
START: 30 October 1990
FINISH: 30 October 1990
DRILLER: D. Richmond
H&A REP: W. Lanik

DEPTH (FT)	CASING BLOWS PER FT	SAMPLER BLOWS PER 6 IN	SAMPLE NUMBER & RECOVERY	SAMPLE DEPTH (FT)	STRATA CHANGE (FT)	VISUAL CLASSIFICATION AND REMARKS
					1.0	-CONCRETE PAD-
		3 2 3 3	S1 19"/24"	1.0 3.0	2.3	Loose dark brown SILT, little organics. -LACUSTRINE-
		7 7 7 6	S2 24"/24"	3.0 5.0		Loose light brown fine SAND. Same, except medium dense. -LACUSTRINE-
5						Bottom of Boring at 5.0 ft.
10						
15						
20						
25						

WATER LEVEL DATA

DATE	TIME	ELAPSED TIME (HR)	DEPTH (FT) TO: BOTTOM OF CASING	BOTTOM OF HOLE	WATER

SAMPLE IDENTIFICATION

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon

SUMMARY

OVERBURDEN (LIN FT): 5.0
ROCK CORED (LIN FT): --
SAMPLES: 2S
BORING NO. B270

H&A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists	TEST BORING REPORT	BORING NO. B271

PROJECT: ROTH BROS. SMELTING CORPORATION - PHASE II
CLIENT: NIXON HARGRAVE DEVANS & DOYLE
CONTRACTOR: PARRATT-WOLFF, INC.

FILE NO. 70185-42
SHEET NO. 1 OF 1
LOCATION: See Plan

ITEM	CASING	DRIVE SAMPLER	CORE BARREL
TYPE	Auger	SS	---
INSIDE DIAMETER (IN)	4-1/4	1-3/8	---
HAMMER WEIGHT (LB)	---	140	---
HAMMER FALL (IN)	---	30	---

DRILLING EQUIPMENT & PROCEDURES

RIG TYPE: Mobile B-57, Truck Mounted
BIT TYPE: ---
DRILL MUD: ---
OTHER: Advanced augers through concrete pad to 0.5 ft.

ELEVATION:
DATUM:
START: 31 October 1990
FINISH: 31 October 1990
DRILLER: D. Richmond
H&A REP: W. Lanik

DEPTH (FT)	CASING BLOWS PER FT	SAMPLER BLOWS PER 6 IN	SAMPLE NUMBER & RECOVERY	SAMPLE DEPTH (FT)	STRATA CHANGE (FT)	VISUAL CLASSIFICATION AND REMARKS
					0.5	-CONCRETE PAD-
		4 5 7 8	S1 14"/24"	0.5 2.5		Medium dense dark brown gravelly SILT, little to trace sand, with occasional cinders. -FILL-
		6 6 5 4	S2 18"/24"	2.5 4.5	3.0	Same, except brown and mottled. -FILL-
5						Medium dense dark brown sandy SILT, little orgaincs, trace fine gravel. -LACUSTRINE-
						Bottom of Boring at 4.5 ft.
10						
15						
20						
25						

WATER LEVEL DATA

DATE	TIME	ELAPSED TIME (HR)	DEPTH (FT) TO: BOTTOM OF CASING	DEPTH (FT) TO: BOTTOM OF HOLE	DEPTH (FT) TO: WATER

SAMPLE IDENTIFICATION

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon

SUMMARY

OVERBURDEN (LIN FT): 4.5
ROCK CORED (LIN FT): --
SAMPLES: 2S
BORING NO. B271

H&A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists	TEST BORING REPORT	BORING NO. B272

PROJECT: ROTH BROS. SMELTING CORPORATION - PHASE II
CLIENT: NIXON HARGRAVE DEVANS & DOYLE
CONTRACTOR: PARRATT-WOLFF, INC.

FILE NO. 70185-42
SHEET NO. 1 OF 1
LOCATION: See Plan

ITEM	CASING	DRIVE SAMPLER	CORE BARREL
TYPE	Auger	SS	---
INSIDE DIAMETER (IN)	4-1/4	2-3/8	---
HAMMER WEIGHT (LB)	---	140	---
HAMMER FALL (IN)	---	30	---

DRILLING EQUIPMENT & PROCEDURES

RIG TYPE: Mobile B-57, Truck Mounted
BIT TYPE: ---
DRILL MUD: ---
OTHER: Advanced augers through asphalt to 1.0 ft.

ELEVATION:
DATUM:
START: 31 October 1990
FINISH: 31 October 1990
DRILLER: D. Richmond
H&A REP: W. Lanik

DEPTH (FT)	CASING BLOWS PER FT	SAMPLER BLOWS PER 6 IN	SAMPLE NUMBER & RECOVERY	SAMPLE DEPTH (FT)	STRATA CHANGE (FT)	VISUAL CLASSIFICATION AND REMARKS
					1.0	-ASPHALT WITH SUB-BASE-
		4 7 11 15	S1 14"/24"	1.0 3.0	2.8	Medium dense brown gravelly SILT, little sand, with wood fragments. -FILL- Medium dense dark brown sandy SILT, little organics. -BURIED TOPSOIL-
5						Bottom of Boring at 3.0 ft.
10						Note: 1. Sample S1 submitted for chemical analysis.
15						
20						
25						

WATER LEVEL DATA

DATE	TIME	ELAPSED TIME (HR)	DEPTH (FT) TO: BOTTOM OF CASING	DEPTH (FT) TO: BOTTOM OF HOLE	DEPTH (FT) TO: WATER

SAMPLE IDENTIFICATION

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon

SUMMARY

OVERBURDEN (LIN FT): 3.0
ROCK CORED (LIN FT): --
SAMPLES: 1S
BORING NO. B272

H&A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists	TEST BORING REPORT	BORING NO. B273

PROJECT: ROTH BROS. SMELTING CORPORATION - PHASE II
CLIENT: NIXON HARGRAVE DEVANS & DOYLE
CONTRACTOR: PARRATT-WOLFF, INC.

FILE NO. 70185-42
SHEET NO. 1 OF 1
LOCATION: See Plan

ITEM	CASING	DRIVE SAMPLER	CORE BARREL
TYPE	Auger	SS	---
INSIDE DIAMETER (IN)	4-1/4	1-3/8	---
HAMMER WEIGHT (LB)	---	140	---
HAMMER FALL (IN)	---	30	---

DRILLING EQUIPMENT & PROCEDURES

RIG TYPE: Mobile B-57, Truck Mounted
BIT TYPE: ---
DRILL MUD: ---
OTHER: Advanced augers to 13.5 ft.

ELEVATION: 417.00
DATUM: NGVD
START: 31 October 1990
FINISH: 31 October 1990
DRILLER: D. Richmond
H&A REP: W. Lanik

DEPTH (FT)	CASING BLOWS PER FT	SAMPLER BLOWS PER 6 IN	SAMPLE NUMBER & RECOVERY	SAMPLE DEPTH (FT)	STRATA CHANGE (FT)	VISUAL CLASSIFICATION AND REMARKS
					1.0	-CONCRETE PAD-
		7 8 12 9	S1* 21"/24"	1.0 3.0		Medium dense brown mottled silty coarse to fine SAND, trace gravel. -FILL-
		6 4 4 5	S2 15"/24"	3.0 5.0		Loose brown to dark brown mottled fine sandy SILT, trace gravel, trace organics. Same. -FILL-
5		2 2 3 3	S3 17"/24"	5.0 7.0	5.3	Loose dark brown sandy SILT, little organics. Same, except wet. -BURIED TOPSOIL-
		4 5 8 8	S4 21"/24"	7.0 9.0	7.7	Medium dense red-brown sandy SILT, trace gravel. -GLACIAL TILL-
10		10 12 13 20	S5 10"/24"	9.0 11.0		Same, except with occasional layer of coarse to medium sand.
		18 16 18 21	S6 24"/24"	11.0 13.0		Same, except dense. -GLACIAL TILL-
15						Bottom of Boring at 13.5 ft.
20						Note: 1. Sample S1 submitted for chemical analysis. 2. * Sample obtained with 2-3/8 in. I.D. split spoon. 3. Observation well installed in completed boring. See Groundwater Observation Well Report.
25						

WATER LEVEL DATA					
DATE	TIME	ELAPSED TIME (HR)	DEPTH (FT) TO: BOTTOM OF CASING	DEPTH (FT) TO: BOTTOM OF HOLE	DEPTH (FT) TO: WATER
See Groundwater Monitoring Report.					

SAMPLE IDENTIFICATION

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon

SUMMARY

OVERBURDEN (LIN FT): 13.5
ROCK CORED (LIN FT): --
SAMPLES: 6S
BORING NO. B273

H&A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists	TEST BORING REPORT	BORING NO. B274

PROJECT: ROTH BROS. SMELTING CORPORATION - PHASE II
CLIENT: NIXON HARGRAVE DEVANS & DOYLE
CONTRACTOR: PARRATT-WOLFF, INC.

FILE NO. 70185-42
SHEET NO. 1 OF 1
LOCATION: See Plan

ITEM	CASING	DRIVE SAMPLER	CORE BARREL
TYPE	Auger	SS	---
INSIDE DIAMETER (IN)	4-1/4	2-3/8	---
HAMMER WEIGHT (LB)	---	140	---
HAMMER FALL (IN)	---	30	---

DRILLING EQUIPMENT & PROCEDURES

RIG TYPE: Mobile B-57, Truck Mounted
BIT TYPE: ---
DRILL MUD: ---
OTHER: Advanced augers through concrete pad to 1.0 ft.

ELEVATION:
DATUM:
START: 31 October 1990
FINISH: 31 October 1990
DRILLER: D. Richmond
H&A REP: W. Lanik

DEPTH (FT)	CASING BLOWS PER FT	SAMPLER BLOWS PER 6 IN	SAMPLE NUMBER & RECOVERY	SAMPLE DEPTH (FT)	STRATA CHANGE (FT)	VISUAL CLASSIFICATION AND REMARKS
					1.0	-CONCRETE PAD-
		12 10 9 8	S1 18"/24"	1.0 3.0	1.8	Medium dense brown gravelly coarse to fine SAND, with wood fragments. -FILL- Loose dark brown sandy SILT, little organics. -BURIED TOPSOIL-
5						Bottom of Boring at 3.0 ft.
10						Note: 1. Sample S1 submitted for chemical analysis.
15						
20						
25						

WATER LEVEL DATA

DATE	TIME	ELAPSED TIME (HR)	DEPTH (FT) TO: BOTTOM OF CASING	DEPTH (FT) TO: BOTTOM OF HOLE	DEPTH (FT) TO: WATER

SAMPLE IDENTIFICATION

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon

SUMMARY

OVERBURDEN (LIN FT): 3.0
ROCK CORED (LIN FT): --
SAMPLES: 1S
BORING NO. B274

H&A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists	TEST BORING REPORT	BORING NO. B275

PROJECT: ROTH BROS. SMELTING CORPORATION - PHASE II
CLIENT: NIXON HARGRAVE DEVANS & DOYLE
CONTRACTOR: PARRATT-WOLFF, INC.

FILE NO. 70185-42
SHEET NO. 1 OF 1
LOCATION: See Plan

ITEM	CASING	DRIVE SAMPLER	CORE BARREL
TYPE	Auger	SS	---
INSIDE DIAMETER (IN)	4-1/4	2-3/8	---
HAMMER WEIGHT (LB)	---	140	---
HAMMER FALL (IN)	---	30	---

DRILLING EQUIPMENT & PROCEDURES

RIG TYPE: Mobile B-57, Truck Mounted
BIT TYPE: ---
DRILL MUD: ---
OTHER: Advanced augers through concrete pad to 1.0 ft.

ELEVATION:
DATUM:
START: 31 October 1990
FINISH: 31 October 1990
DRILLER: D. Richmond
H&A REP: W. Lanik

DEPTH (FT)	CASING BLOWS PER FT	SAMPLER BLOWS PER 6 IN	SAMPLE NUMBER & RECOVERY	SAMPLE DEPTH (FT)	STRATA CHANGE (FT)	VISUAL CLASSIFICATION AND REMARKS
					1.0	-CONCRETE PAD-
		12 5 4 4	S1 3"/24"	1.0 3.0	2.5	Loose gray-brown gravelly coarse to fine SAND, wet. -FILL-
		4 6 7 10	S2 24"/24"	3.0 5.0		Medium dense dark brown sandy SILT, little organics. Same, except loose. -BURIED TOPSOIL-
5						Bottom of Boring at 5.0 ft.
10						
15						
20						
25						

Note:

1. Composite of sample S1 and top 0.5 ft. of sample S2 submitted for chemical analysis.

WATER LEVEL DATA					
DATE	TIME	ELAPSED TIME (HR)	DEPTH (FT) TO: BOTTOM OF CASING	DEPTH (FT) TO: BOTTOM OF HOLE	DEPTH (FT) TO: WATER

SAMPLE IDENTIFICATION

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon

SUMMARY

OVERBURDEN (LIN FT): 5.0
ROCK CORED (LIN FT): --
SAMPLES: 2S
BORING NO. B2

H&A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists	TEST BORING REPORT	BORING NO. B276

PROJECT: ROTH BROS. SMELTING CORPORATION - PHASE II
CLIENT: NIXON HARGRAVE DEVANS & DOYLE
CONTRACTOR: PARRATT-WOLFF, INC.

FILE NO. 70185-42
SHEET NO. 1 OF 1
LOCATION: See Plan

ITEM	CASING	DRIVE SAMPLER	CORE BARREL
TYPE	Auger	SS	---
INSIDE DIAMETER (IN)	4-1/4	2-3/8	---
HAMMER WEIGHT (LB)	---	140	---
HAMMER FALL (IN)	---	30	---

DRILLING EQUIPMENT & PROCEDURES

RIG TYPE: Mobile B-57, Truck Mounted
BIT TYPE: ---
DRILL MUD: ---
OTHER: Advanced augers through concrete pad to 1.0 ft.

ELEVATION:
DATUM:
START: 31 October 1990
FINISH: 31 October 1990
DRILLER: D. Richmond
H&A REP: W. Lanik

DEPTH (FT)	CASING BLOWS PER FT	SAMPLER BLOWS PER 6 IN	SAMPLE NUMBER & RECOVERY	SAMPLE DEPTH (FT)	STRATA CHANGE (FT)	VISUAL CLASSIFICATION AND REMARKS
					1.0	-CONCRETE PAD-
		4 4 3	S1 3"/24"	1.0 3.0		Loose gray-brown sandy GRAVEL, wet. Same. -FILL-
		2 4 9	S2	3.0	3.3	Medium dense dark brown sandy SILT, little organics. -BURIED TOPSOIL-
5		7 11	24"/24"	5.0	4.5	Medium dense light brown coarse to medium SAND, trace gravel. -LACUSTRINE-
						Bottom of Boring at 5.0 ft.
10						Note: 1. Composite of sample S1 and top 0.5 ft. of sample S2 submitted for chemical analysis.
15						
20						
25						

WATER LEVEL DATA					
DATE	TIME	ELAPSED TIME (HR)	DEPTH (FT) TO: BOTTOM OF CASING	DEPTH (FT) TO: BOTTOM OF HOLE	DEPTH (FT) TO: WATER

SAMPLE IDENTIFICATION

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon

SUMMARY

OVERBURDEN (LIN FT): 5.0
ROCK CORED (LIN FT): --
SAMPLES: 2S
BORING NO. B276

H&A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists	TEST BORING REPORT	BORING NO. B277

PROJECT: ROTH BROS. SMELTING CORPORATION - PHASE II
CLIENT: NIXON HARGRAVE DEVANS & DOYLE
CONTRACTOR: PARRATT-WOLFF, INC.

FILE NO. 70185-42
SHEET NO. 1 OF 1
LOCATION: See Plan

ITEM	CASING	DRIVE SAMPLER	CORE BARREL
TYPE	Auger	SS	---
INSIDE DIAMETER (IN)	4-1/4	1-3/8	---
HAMMER WEIGHT (LB)	---	140	---
HAMMER FALL (IN)	---	30	---

DRILLING EQUIPMENT & PROCEDURES

RIG TYPE: Mobile B-57, Truck Mounted
BIT TYPE: ---
DRILL MUD: ---
OTHER: Advanced augers to 10.0 ft.

ELEVATION:
DATUM:
START: 1 November 1990
FINISH: 1 November 1990
DRILLER: D. Richmond
H&A REP: W. Lanik

DEPTH (FT)	CASING BLOWS PER FT	SAMPLER BLOWS PER 6 IN	SAMPLE NUMBER & RECOVERY	SAMPLE DEPTH (FT)	STRATA CHANGE (FT)	VISUAL CLASSIFICATION AND REMARKS
		4 5 6 8	S1 21"/24"	0.0 2.0	0.5	Medium dense dark brown silty coarse to fine SAND, trace gravel, trace organics. -FILL-
		8 12 9 11	S2 22"/24"	2.0 4.0		Medium dense red-brown to brown mottled sandy SILT, trace gravel, trace organics. Same, except no organics. Same. -GLACIAL TILL-
5		8 8 7 12	S3 24"/24"	4.0 6.0	4.8	Medium dense light brown silty coarse to fine SAND, trace gravel, layered. -LACUSTRINE-
		13 12 9 11	S4 24"/24"	6.0 8.0		Medium dense light brown interlayered fine SAND and SILT, with layer of coarse to medium sand from 6.0 to 6.2 ft.
		4 3 2 4	S5 12"/24"	8.0 10.0		Same, except loose, with layer of brown sandy SILT, trace organics from 8.0 to 8.4 ft. -LACUSTRINE-
10						Bottom of Boring at 10.0 ft.
						Note: Observation well installed in completed boring. See Groudwater Observation Well Report.
15						
20						
25						

WATER LEVEL DATA

DATE	TIME	ELAPSED TIME (HR)	DEPTH (FT) TO: BOTTOM OF CASING	BOTTOM OF HOLE	WATER
		See Groundwater Monitoring Report			

SAMPLE IDENTIFICATION

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon

SUMMARY

OVERBURDEN (LIN FT):	10.0
ROCK CORED (LIN FT):	--
SAMPLES:	5S
BORING NO.	B277

H&A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists	TEST BORING REPORT	BORING NO. B278

PROJECT: ROTH BROS. SMELTING CORPORATION - PHASE II
CLIENT: NIXON HARGRAVE DEVANS & DOYLE
CONTRACTOR: PARRATT-WOLFF, INC.

FILE NO. 70185-42
SHEET NO. 1 OF 1
LOCATION: See Plan

ITEM	CASING	DRIVE SAMPLER	CORE BARREL
TYPE	Auger	SS	---
INSIDE DIAMETER (IN)	4-1/4	2-3/8	---
HAMMER WEIGHT (LB)	---	140	---
HAMMER FALL (IN)	---	30	---

DRILLING EQUIPMENT & PROCEDURES

RIG TYPE: Mobile B-57, Truck Mounted
BIT TYPE: ---
DRILL MUD: ---
OTHER: Advanced augers to 12.0 ft.

ELEVATION:
DATUM:
START: 1 November 1990
FINISH: 1 November 1990
DRILLER: D. Richmond
H&A REP: W. Lanik

DEPTH (FT)	CASING BLOWS PER FT	SAMPLER BLOWS PER 6 IN	SAMPLE NUMBER & RECOVERY	SAMPLE DEPTH (FT)	STRATA CHANGE (FT)	VISUAL CLASSIFICATION AND REMARKS
0		5 12 13 13	S1 24"/24"	0.0 2.0		Medium dense dark brown gravelly SILT, little to trace sand, with wood fragments, cinder particles, concrete pieces, and ash. -FILL-
		11 10 11 9	S2 24"/24"	2.0 4.0	3.0	Same.
5		6 10 10 9	S3 24"/24"	4.0 6.0		Medium dense light brown medium to fine SAND, trace coarse sand, with occasional layer of silt. -LACUSTRINE- Same.
		4 4 5 4	S4* 18"/24"	6.0 8.0		Loose brown coarse SAND, trace medium sand, trace gravel, with layer of medium to fine sand from 7.5 to 8.0 ft.
		4 5 6 5	S5* 15"/24"	8.0 10.0		Medium dense light brown coarse to medium SAND. -LACUSTRINE-
10						Bottom of Boring at 12.0 ft.
15						Notes: 1. * Sample obtained with 1-3/8 in. I.D. split spoon. 2. Samples S1, S2, and S3 submitted for chemical analysis. 3. Observation well installed in completed boring. See Groundwater Observation Well Report.
20						
25						

WATER LEVEL DATA

DATE	TIME	ELAPSED TIME (HR)	DEPTH (FT) TO: BOTTOM OF CASING	DEPTH (FT) TO: BOTTOM OF HOLE	DEPTH (FT) TO: WATER
		See Groundwater Monitoring Report			

SAMPLE IDENTIFICATION

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon

SUMMARY

OVERBURDEN (LIN FT): 12.0
ROCK CORED (LIN FT): --
SAMPLES: 5S
BORING NO. B278

H&A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists	TEST BORING REPORT	BORING NO. B279

PROJECT: ROTH BROS. SMELTING CORPORATION - PHASE II
CLIENT: NIXON HARGRAVE DEVANS & DOYLE
CONTRACTOR: PARRATT-WOLFF, INC.

FILE NO. 70185-42
SHEET NO. 1 OF 1
LOCATION: See Plan

ITEM	CASING	DRIVE SAMPLER	CORE BARREL
TYPE	Auger	SS	---
INSIDE DIAMETER (IN)	4-1/4	1-3/8	---
HAMMER WEIGHT (LB)	---	140	---
HAMMER FALL (IN)	---	30	---

DRILLING EQUIPMENT & PROCEDURES

RIG TYPE: Mobile B-57, Truck Mounted
BIT TYPE: ---
DRILL MUD: ---
OTHER: Advanced augers to 10.0 ft.

ELEVATION:
DATUM:
START: 1 November 1990
FINISH: 1 November 1990
DRILLER: D. Richmond
H&A REP: W. Lanik

DEPTH (FT)	CASING BLOWS PER FT	SAMPLER BLOWS PER 6 IN	SAMPLE NUMBER & RECOVERY	SAMPLE DEPTH (FT)	STRATA CHANGE (FT)	VISUAL CLASSIFICATION AND REMARKS
		4 8 7 4	S1 13"/24"	0.0 2.0	2.0	Medium dense dark brown to brown mottled sandy SILT, trace gravel, with cinder particles. -FILL-
		2 2 2 1	S2 8"/24"	2.0 4.0		Loose dark brown ORGANIC SILT, wet. -LACUSTRINE-
5		WOH WOH 2 1	S3 21"/24"	4.0 6.0		Same, except very loose with frequent coarse to medium sandy layers.
		WOH WOH 2 4	S4 24"/24"	6.0 8.0	6.5	Same. -LACUSTRINE- Loose light brown coarse to medium sand, with frequent seams and layers of silt.
10		6 3 5 7	S5 15"/24"	8.0 10.0		Loose light brown medium SAND, with frequent seams and layers of fine sand, -LACUSTRINE-
15						Bottom of Boring at 10.0 ft. Note: Observation well installed in completed boring. See Groundwater Observation Well Report.
20						
25						

WATER LEVEL DATA

DATE	TIME	ELAPSED TIME (HR)	DEPTH (FT) TO: BOTTOM OF CASING	DEPTH (FT) TO: BOTTOM OF HOLE	DEPTH (FT) TO: WATER
		See Groundwater Monitoring Report			

SAMPLE IDENTIFICATION

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon

SUMMARY

OVERBURDEN (LIN FT):	10.0
ROCK CORED (LIN FT):	--
SAMPLES:	5S
BORING NO.	B279

H&A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists	TEST BORING REPORT	BORING NO. B280

PROJECT: ROTH BROS. SMELTING CORPORATION - PHASE II
CLIENT: NIXON HARGRAVE DEVANS & DOYLE
CONTRACTOR: PARRATT-WOLFF, INC.

FILE NO. 70185-42
SHEET NO. 1 OF 1
LOCATION: See Plan

ITEM	CASING	DRIVE SAMPLER	CORE BARREL
TYPE	Auger	SS	---
INSIDE DIAMETER (IN)	4-1/4	1-3/8	---
HAMMER WEIGHT (LB)	---	140	---
HAMMER FALL (IN)	---	30	---

DRILLING EQUIPMENT & PROCEDURES

RIG TYPE: Mobile B-57, Truck Mounted
BIT TYPE: ---
DRILL MUD: ---
OTHER: Advanced augers to 10.0 ft.

ELEVATION:
DATUM:
START: 1 November 1990
FINISH: 1 November 1990
DRILLER: D. Richmond
H&A REP: W. Lanik

DEPTH (FT)	CASING BLOWS PER FT	SAMPLER BLOWS PER 6 IN	SAMPLE NUMBER & RECOVERY	SAMPLE DEPTH (FT)	STRATA CHANGE (FT)	VISUAL CLASSIFICATION AND REMARKS
		1 1 1 2	S1 3"/24"	0.0 2.0	1.0	Very loose brown gravelly SILT, little sand, with wood fragments. -FILL-
		3 5 5 7	S2 20"/24"	2.0 4.0	2.2	Very loose dark brown LOAM. -BURIED TOPSOIL-
5		5 4 5 5	S3 20"/24"	4.0 6.0		Loose light brown mottled fine sandy SILT. -LACUSTRINE- Loose light brown SILT, with occasional layers of fine sand.
		4 8 9 9	S4 24"/24"	6.0 8.0		Medium dense light brown fine SAND, with frequent layers of silt from 6.0 to 7.0 ft.
		6 8 6 7	S5 24"/24"	8.0 10.0		Medium dense interbedded light brown medium and fine SAND. -LACUSTRINE-
10						Bottom of Boring at 10.0 ft.
						Note: Observation well installed in completed boring. See Groundwater Observation Well Report.
15						
20						
25						

WATER LEVEL DATA

DATE	TIME	ELAPSED TIME (HR)	DEPTH (FT) TO: BOTTOM OF CASING	BOTTOM OF HOLE	WATER
		See Groundwater Monitoring Report			

SAMPLE IDENTIFICATION

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon

SUMMARY

OVERBURDEN (LIN FT):	10.0
ROCK CORED (LIN FT):	---
SAMPLES:	5S
BORING NO.	B280

H&A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists	TEST BORING REPORT	BORING NO. B281

PROJECT: ROTH BROS. SMELTING CORPORATION - PHASE II
CLIENT: NIXON HARGRAVE DEVANS & DOYLE
CONTRACTOR: PARRATT-WOLFF, INC.

FILE NO. 70185-42
SHEET NO. 1 OF 1
LOCATION: See Plan

ITEM	CASING	DRIVE SAMPLER	CORE BARREL
TYPE	Auger	SS	---
INSIDE DIAMETER (IN)	4-1/4	1-3/8	---
HAMMER WEIGHT (LB)	---	140	---
HAMMER FALL (IN)	---	30	---

DRILLING EQUIPMENT & PROCEDURES

RIG TYPE: Mobile B-57, Truck Mounted
BIT TYPE: ---
DRILL MUD: ---
OTHER: Advanced augers to 10.0 ft.

ELEVATION:
DATUM:
START: 5 November 1990
FINISH: 5 November 1990
DRILLER: D. Richmond
H&A REP: W. Lanik

DEPTH (FT)	CASING BLOWS PER FT	SAMPLER BLOWS PER 6 IN	SAMPLE NUMBER & RECOVERY	SAMPLE DEPTH (FT)	STRATA CHANGE (FT)	VISUAL CLASSIFICATION AND REMARKS
0		1 1 2 2	S1 10"/24"	0.0 2.0		Very loose brown to dark brown sandy SILT, trace gravel. Same. -FILL-
		5 8 9 12	S2 10"/24"	2.0 4.0	2.2	Medium dense red-brown sandy SILT, trace gravel. -GLACIAL TILL-
5		8 14 16 16	S3 18"/24"	4.0 6.0		Same.
		27 50/0.3	S4 9"/9"	6.0-6.8		Same, except very dense.
		50/0.4	S5 5"/5"	8.0-8.4		Same. -GLACIAL TILL-
10						Bottom of Boring at 10.0 ft.
						Note: Observation well installed in completed boring. See Groundwater Observation Well Report.
15						
20						
25						

WATER LEVEL DATA

DATE	TIME	ELAPSED TIME (HR)	DEPTH (FT) TO: BOTTOM OF CASING	BOTTOM OF HOLE	WATER
		See Groundwater Level Monitoring Report			

SAMPLE IDENTIFICATION

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon

SUMMARY

OVERBURDEN (LIN FT): 10.0
ROCK CORED (LIN FT): --
SAMPLES: 5S
BORING NO. B281

H&A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists	TEST BORING REPORT	BORING NO. B282

PROJECT: ROTH BROS. SMELTING CORPORATION - PHASE II
CLIENT: NIXON HARGRAVE DEVANS & DOYLE
CONTRACTOR: PARRATT-WOLFF, INC.

FILE NO. 70185-42
SHEET NO. 1 OF 1
LOCATION: See Plan

ELEVATION:
DATUM:
START: 5 November 1990
FINISH: 5 November 1990
DRILLER: D. Richmond
H&A REP: W. Lanik

ITEM	CASING	DRIVE SAMPLER	CORE BARREL
TYPE	---	SS	---
INSIDE DIAMETER (IN)	---	1-3/8	---
HAMMER WEIGHT (LB)	---	NA	---
HAMMER FALL (IN)	---	NA	---

DRILLING EQUIPMENT & PROCEDURES

RIG TYPE: ---
BIT TYPE: ---
DRILL MUD: ---
OTHER: Advanced split spoon with sledge hammer

DEPTH (FT)	CASING BLOWS PER FT	SAMPLER BLOWS PER 6 IN	SAMPLE NUMBER & RECOVERY	SAMPLE DEPTH (FT)	STRATA CHANGE (FT)	VISUAL CLASSIFICATION AND REMARKS
			S1 24"/24"	0.0 2.0		Dark brown to brown sandy SILT, little to trace gravel, trace organics. -FILL-
						Bottom of Boring at 2.0 ft.
						Note: Sample S1 submitted for chemical analysis.
5						
10						
15						
20						
25						

WATER LEVEL DATA

DATE	TIME	ELAPSED TIME (HR)	DEPTH (FT) TO: BOTTOM OF CASING	DEPTH (FT) TO: BOTTOM OF HOLE	DEPTH (FT) TO: WATER

SAMPLE IDENTIFICATION

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon

SUMMARY

OVERBURDEN (LIN FT):	2.0
ROCK CORED (LIN FT):	--
SAMPLES:	1S
BORING NO.	B282

H&A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists	TEST BORING REPORT	BORING NO. B283

PROJECT: ROTH BROS. SMELTING CORPORATION - PHASE II
CLIENT: NIXON HARGRAVE DEVANS & DOYLE
CONTRACTOR: PARRATT-WOLFF, INC.

FILE NO. 70185-42
SHEET NO. 1 OF 1
LOCATION: See Plan

ITEM	CASING	DRIVE SAMPLER	CORE BARREL
TYPE	---	SS	---
INSIDE DIAMETER (IN)	---	1-3/8	---
HAMMER WEIGHT (LB)	---	NA	---
HAMMER FALL (IN)	---	NA	---

DRILLING EQUIPMENT & PROCEDURES

RIG TYPE: ---
BIT TYPE: ---
DRILL MUD: ---
OTHER: Advanced split spoon with sledge hammer

ELEVATION:
DATUM:
START: 5 November 1990
FINISH: 5 November 1990
DRILLER: D. Richmond
H&A REP: W. Lanik

DEPTH (FT)	CASING BLOWS PER FT	SAMPLER BLOWS PER 6 IN	SAMPLE NUMBER & RECOVERY	SAMPLE DEPTH (FT)	STRATA CHANGE (FT)	VISUAL CLASSIFICATION AND REMARKS
			S1 24"/24"	0.0 2.0		Dark brown to brown sandy SILT, little to trace gravel, trace organics. -FILL-
						Bottom of Boring at 2.0 ft.
						Note: Sample S1 submitted for chemical analysis.
5						
10						
15						
20						
25						

WATER LEVEL DATA

DATE	TIME	ELAPSED TIME (HR)	DEPTH (FT) TO: BOTTOM OF CASING	BOTTOM OF HOLE	WATER

SAMPLE IDENTIFICATION

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon

SUMMARY

OVERBURDEN (LIN FT):	2.0
ROCK CORED (LIN FT):	--
SAMPLES:	1S
BORING NO.	B283

H&A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists	TEST BORING REPORT	BORING NO. B284

PROJECT: ROTH BROS. SMELTING CORPORATION - PHASE II
CLIENT: NIXON HARGRAVE DEVANS & DOYLE
CONTRACTOR: PARRATT-WOLFF, INC.

FILE NO. 70185-42
SHEET NO. 1 OF 1
LOCATION: See Plan

ITEM	CASING	DRIVE SAMPLER	CORE BARREL
TYPE	---	SS	---
INSIDE DIAMETER (IN)	---	1-3/8	---
HAMMER WEIGHT (LB)	---	NA	---
HAMMER FALL (IN)	---	NA	---

DRILLING EQUIPMENT & PROCEDURES

RIG TYPE: ---
BIT TYPE: ---
DRILL MUD: ---
OTHER: Advanced split spoon with sledge hammer

ELEVATION:
DATUM:
START: 5 November 1990
FINISH: 5 November 1990
DRILLER: D. Richmond
H&A REP: W. Lanik

DEPTH (FT)	CASING BLOWS PER FT	SAMPLER BLOWS PER 6 IN	SAMPLE NUMBER & RECOVERY	SAMPLE DEPTH (FT)	STRATA CHANGE (FT)	VISUAL CLASSIFICATION AND REMARKS
			S1 24"/24"	0.0 2.0		Dark brown to brown sandy SILT, little to trace gravel, trace organics. -FILL-
						Bottom of Boring at 2.0 ft.
						Note: Sample S1 submitted for chemical analysis.
5						
10						
15						
20						
25						

WATER LEVEL DATA

DATE	TIME	ELAPSED TIME (HR)	DEPTH (FT) TO: BOTTOM OF CASING	DEPTH (FT) TO: BOTTOM OF HOLE	DEPTH (FT) TO: WATER

SAMPLE IDENTIFICATION

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon

SUMMARY

OVERBURDEN (LIN FT):	2.0
ROCK CORED (LIN FT):	--
SAMPLES:	1S
BORING NO.	B284

H&A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists	TEST BORING REPORT	BORING NO. B285

PROJECT: ROTH BROS. SMELTING CORPORATION - PHASE II
CLIENT: NIXON HARGRAVE DEVANS & DOYLE
CONTRACTOR: PARRATT-WOLFF, INC.

FILE NO. 70185-42
SHEET NO. 1 OF 1
LOCATION: See Plan

ITEM	CASING	DRIVE SAMPLER	CORE BARREL
TYPE	---	SS	---
INSIDE DIAMETER (IN)	---	1-3/8	---
HAMMER WEIGHT (LB)	---	NA	---
HAMMER FALL (IN)	---	NA	---

DRILLING EQUIPMENT & PROCEDURES

RIG TYPE: ---
BIT TYPE: ---
DRILL MUD: ---
OTHER: Advanced split spoon with sledge hammer

ELEVATION:
DATUM:
START: 5 November 1990
FINISH: 5 November 1990
DRILLER: D. Richmond
H&A REP: W. Lanik

DEPTH (FT)	CASING BLOWS PER FT	SAMPLER BLOWS PER 6 IN	SAMPLE NUMBER & RECOVERY	SAMPLE DEPTH (FT)	STRATA CHANGE (FT)	VISUAL CLASSIFICATION AND REMARKS
			S1 8"/24"	0.0 2.0		Dark brown to brown sandy SILT, little to trace gravel, trace organics. -FILL-
			S2 10"/24"	2.0 4.0		Same, except trace gravel. -FILL-
						Bottom of Boring at 4.2 ft.
5						Note: Composite of samples S1 and S2 submitted for chemical analysis.
10						
15						
20						
25						

WATER LEVEL DATA					
DATE	TIME	ELAPSED TIME (HR)	DEPTH (FT) TO: BOTTOM OF CASING	DEPTH (FT) TO: BOTTOM OF HOLE	DEPTH (FT) TO: WATER

SAMPLE IDENTIFICATION

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon

SUMMARY

OVERBURDEN (LIN FT):	2.0
ROCK CORED (LIN FT):	--
SAMPLES:	2S
BORING NO.	B285

H&A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists	TEST BORING REPORT	BORING NO. B286

PROJECT: ROTH BROS. SMELTING CORPORATION - PHASE II
CLIENT: NIXON HARGRAVE DEVANS & DOYLE
CONTRACTOR: PARRATT-WOLFF, INC.

FILE NO. 70185-42
SHEET NO. 1 OF 1
LOCATION: See Plan

ITEM	CASING	DRIVE SAMPLER	CORE BARREL
TYPE	Auger	SS	---
INSIDE DIAMETER (IN)	4-1/4	1-3/8	---
HAMMER WEIGHT (LB)	---	140	---
HAMMER FALL (IN)	---	30	---

DRILLING EQUIPMENT & PROCEDURES

RIG TYPE: Mobile B-57, Truck Mounted
BIT TYPE: ---
DRILL MUD: ---
OTHER: Advanced augers to 10.0 ft.

ELEVATION:
DATUM:
START: 5 November 1990
FINISH: 5 November 1990
DRILLER: D. Richmond
H&A REP: W. Lanik

DEPTH (FT)	CASING BLOWS PER FT	SAMPLER BLOWS PER 6 IN	SAMPLE NUMBER & RECOVERY	SAMPLE DEPTH (FT)	STRATA CHANGE (FT)	VISUAL CLASSIFICATION AND REMARKS
		2 1 3 5	S1 15"/24"	0.0 2.0	0.5	Very loose dark brown sandy GRAVEL, trace organics. -FILL-
		3 4 8 11	S2 24"/24"	2.0 4.0		Loose red-brown to brown mottled sandy SILT, trace gravel. -GLACIAL TILL- Same, except medium dense, with occasional seams of coarse sand.
5		17 27 50/0.3	S3 12"/15"	4.0 5.3		Same, except very dense.
		50/0.3	S4 4"/4"	6.0-6.3		Same. -GLACIAL TILL-
		26 50/0.4	S5 11/11"	8.0-8.9		Same. -GLACIAL TILL-
10						Bottom of Boring at 10.0 ft. Note: Observation well installed in completed boring. See Groundwater Observation Well Report.
15						
20						
25						

WATER LEVEL DATA

DATE	TIME	ELAPSED TIME (HR)	DEPTH (FT) TO: BOTTOM OF CASING	BOTTOM OF HOLE	WATER
		See Groundwater Level Monitoring Report			

SAMPLE IDENTIFICATION

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon

SUMMARY

OVERBURDEN (LIN FT):	10.0
ROCK CORED (LIN FT):	--
SAMPLES:	5S
BORING NO.	B286

H&A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists	TEST BORING REPORT	BORING NO. B287

PROJECT: ROTH BROS. SMELTING CORPORATION - PHASE II
CLIENT: NIXON HARGRAVE DEVANS & DOYLE
CONTRACTOR: PARRATT-WOLFF, INC.

FILE NO. 70185-42
SHEET NO. 1 OF 1
LOCATION: See Plan

ITEM	CASING	DRIVE SAMPLER	CORE BARREL
TYPE	Auger	SS	---
INSIDE DIAMETER (IN)	4-1/4	1-3/8	---
HAMMER WEIGHT (LB)	---	140	---
HAMMER FALL (IN)	---	30	---

DRILLING EQUIPMENT & PROCEDURES

RIG TYPE: Mobile B-57, Truck Mounted
BIT TYPE: ---
DRILL MUD: ---
OTHER: Advanced augers to 10.0 ft.

ELEVATION:
DATUM:
START: 2 November 1990
FINISH: 2 November 1990
DRILLER: D. Richmond
H&A REP: W. Lanik

DEPTH (FT)	CASING BLOWS PER FT	SAMPLER BLOWS PER 6 IN	SAMPLE NUMBER & RECOVERY	SAMPLE DEPTH (FT)	STRATA CHANGE (FT)	VISUAL CLASSIFICATION AND REMARKS
						-ASPHALT WITH SUB-BASE-
		12 9 11 12	S1 17"/24"	1.0 3.0	1.5	Medium dense gray-brown GRAVEL.
		13 12 8 7	S2 15"/24"	3.0 5.0		Medium dense light brown coarse to fine SAND, trace silt. Same. -LACUSTRINE-
5		5 7 7 4	S3 18"/24"	5.0 7.0	5.0	Medium dense red-brown sandy SILT, trace gravel, with layer of coarse to medium sand from 5.3 to 5.5 ft. -GLACIAL TILL-
10						Bottom of Boring at 10.0 ft.
15						Notes: 1. 40 ppm volatile organic compounds detected inside casing during drilling. 2. Observation well installed in completed boring. See Groundwater Observation Well Report.
20						
25						

WATER LEVEL DATA

DATE	TIME	ELAPSED TIME (HR)	DEPTH (FT) TO: BOTTOM OF CASING	BOTTOM OF HOLE	WATER
		See Groundwater Monitoring Report			

SAMPLE IDENTIFICATION

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon

SUMMARY

OVERBURDEN (LIN FT): 10.0
ROCK CORED (LIN FT): ---
SAMPLES: 3S
BORING NO. B287

H&A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists	TEST BORING REPORT	BORING NO. B288

PROJECT: ROTH BROS. SMELTING CORPORATION - PHASE II
CLIENT: NIXON HARGRAVE DEVANS & DOYLE
CONTRACTOR: PARRATT-WOLFF, INC.

FILE NO. 70185-42
SHEET NO. 1 OF 1
LOCATION: See Plan

ITEM	CASING	DRIVE SAMPLER	CORE BARREL
TYPE	Auger	SS	---
INSIDE DIAMETER (IN)	4-1/4	1-3/8	---
HAMMER WEIGHT (LB)	---	140	---
HAMMER FALL (IN)	---	30	---

DRILLING EQUIPMENT & PROCEDURES

RIG TYPE: Mobile B-57, Truck Mounted
BIT TYPE: ---
DRILL MUD: ---
OTHER: Advanced augers to 5.0 ft.

ELEVATION:
DATUM:
START: 2 November 1990
FINISH: 2 November 1990
DRILLER: D. Richmond
H&A REP: W. Lanik

DEPTH (FT)	CASING BLOWS PER FT	SAMPLER BLOWS PER 6 IN	SAMPLE NUMBER & RECOVERY	SAMPLE DEPTH (FT)	STRATA CHANGE (FT)	VISUAL CLASSIFICATION AND REMARKS
						-ASPHALT WITH SUB-BASE-
		15 16 17	S1 20"/24"	1.0 2.0	2.0	Dense gray-brown sandy GRAVEL, slight black staining at 0.8 ft.
		19 9	S1-B	2.0-3.0		Dense light brown sandy SILT. No Recovery.
		10 10 11	NR	3.0 5.0		-LACUSTRINE-
5						Bottom of Boring at 5.0 ft.
10						
15						
20						
25						

Note:
1. 3 ppm volatile organic compounds detected above soil sample S1.
2. Borehole left open for 2 holes upon completion to record water levels.

WATER LEVEL DATA

DATE	TIME	ELAPSED TIME (HR)	DEPTH (FT) TO: BOTTOM OF CASING	DEPTH (FT) TO: BOTTOM OF HOLE	DEPTH (FT) TO: WATER
11/2/90	1130	1.0	---	5.0	4.2
11/2/90	1230	2.0	---	5.0	4.0

SAMPLE IDENTIFICATION

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon

SUMMARY

OVERBURDEN (LIN FT):	5.0
ROCK CORED (LIN FT):	--
SAMPLES:	2S
BORING NO.	B288

H&A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists	TEST BORING REPORT	BORING NO. B289

PROJECT: ROTH BROS. SMELTING CORPORATION - PHASE II
CLIENT: NIXON HARGRAVE DEVANS & DOYLE
CONTRACTOR: PARRATT-WOLFF, INC.

FILE NO. 70185-42
SHEET NO. 1 OF 1
LOCATION: See Plan

ITEM	CASING	DRIVE SAMPLER	CORE BARREL
TYPE	Auger	SS	---
INSIDE DIAMETER (IN)	4-1/4	1-3/8	---
HAMMER WEIGHT (LB)	---	140	---
HAMMER FALL (IN)	---	30	---

DRILLING EQUIPMENT & PROCEDURES

RIG TYPE: Mobile B-57, Truck Mounted
BIT TYPE: ---
DRILL MUD: ---
OTHER: Advanced augers to 5.0 ft.

ELEVATION:
DATUM:
START: 2 November 1990
FINISH: 2 November 1990
DRILLER: D. Richmond
H&A REP: W. Lanik

DEPTH (FT)	CASING BLOWS PER FT	SAMPLER BLOWS PER 6 IN	SAMPLE NUMBER & RECOVERY	SAMPLE DEPTH (FT)	STRATA CHANGE (FT)	VISUAL CLASSIFICATION AND REMARKS
						-ASPHALT WITH SUB-BASE-
		5 7 7	S1 14"/24"	1.0 3.0	1.3	Medium dense gray-brown coarse SAND, trace gravel.
		7				Medium dense dark brown medium sandy GRAVEL, trace silt, with black stained cinders.
		23 22 14	S2 12"/24"	3.0 5.0	3.5	-FILL- Same.
5		11				Dense light brown coarse to medium SAND, trace gravel. -LACUSTRINE-
						Bottom of Boring at 5.0 ft.
10						
15						
20						
25						

Note:
1. No volatile organic compounds detected above background levels within exploration.
2. Borehole left open for 2 hours upon completion to record water levels.

WATER LEVEL DATA

DATE	TIME	ELAPSED TIME (HR)	DEPTH (FT) TO: BOTTOM OF CASING	DEPTH (FT) TO: BOTTOM OF HOLE	DEPTH (FT) TO: WATER
11/2/90	1130	2.0	--	5.0	1.4

SAMPLE IDENTIFICATION

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon

SUMMARY

OVERBURDEN (LIN FT):	5.0
ROCK CORED (LIN FT):	--
SAMPLES:	2S
BORING NO.	B289

H&A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists	TEST BORING REPORT	BORING NO. B290

PROJECT: ROTH BROS. SMELTING CORPORATION - PHASE II
CLIENT: NIXON HARGRAVE DEVANS & DOYLE
CONTRACTOR: PARRATT-WOLFF, INC.

FILE NO. 70185-42
SHEET NO. 1 OF 1
LOCATION: See Plan

ITEM	CASING	DRIVE SAMPLER	CORE BARREL
TYPE	Auger	SS	---
INSIDE DIAMETER (IN)	4-1/4	1-3/8	---
HAMMER WEIGHT (LB)	---	140	---
HAMMER FALL (IN)	---	30	---

DRILLING EQUIPMENT & PROCEDURES

RIG TYPE: Mobile B-57, Truck Mounted
BIT TYPE: ---
DRILL MUD: ---
OTHER: Advanced augers to 10.5 ft.

ELEVATION:
DATUM:
START: 5 November 1990
FINISH: 6 November 1990
DRILLER: D. Richmond
H&A REP: W. Lanik

DEPTH (FT)	CASING BLOWS PER FT	SAMPLER BLOWS PER 6 IN	SAMPLE NUMBER & RECOVERY	SAMPLE DEPTH (FT)	STRATA CHANGE (FT)	VISUAL CLASSIFICATION AND REMARKS
		7 7 5 4	S1 24"/24"	0.0 2.0		Medium dense brown sandy GRAVEL, little to trace silt. -FILL- Same.
		4 3 3 3	S2 14"/24"	2.0 4.0	2.3 4.0	Loose brown to dark brown ORGANIC SILT, wet. -LACUSTRINE-
5		11 27 41 14	S3 15"/24"	4.0 6.0		Very dense red-brown sandy SILT, trace gravel. -GLACIAL TILL-
		14 11 10 7	S4 18"/24"	6.0 8.0		Medium dense red-brown coarse to fine SAND, trace silt, trace gravel.
		5 7 7 9	S5 24"/24"	8.0 10.0		Same, except some silt. -GLACIAL TILL-
10						Bottom of Boring at 10.5 ft. Note: Observation well installed in completed boring. See Groundwater Observation Well Report.
15						
20						
25						

WATER LEVEL DATA

DATE	TIME	ELAPSED TIME (HR)	DEPTH (FT) TO: BOTTOM OF CASING	BOTTOM OF HOLE	WATER
11/6/90	0730	14	4.0	4.0	2.7
		See Groundwater Level Monitoring Report			

SAMPLE IDENTIFICATION

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon

SUMMARY

OVERBURDEN (LIN FT):	10.5
ROCK CORED (LIN FT):	--
SAMPLES:	5S
BORING NO.	B290

H&A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists	TEST BORING REPORT	BORING NO. B291

PROJECT: ROTH BROS. SMELTING CORPORATION - PHASE II
CLIENT: NIXON, HARGRAVE, DEVANS & DOYLE
CONTRACTOR: PARRATT-WOLFF, INC.

FILE NO. 70185-42
SHEET NO. 1 OF 1
LOCATION: See Plan

ITEM	CASING	DRIVE SAMPLER	CORE BARREL
TYPE	Auger	S	---
INSIDE DIAMETER (IN)	4-1/4	1-3/8	---
HAMMER WEIGHT (LB)	---	140	---
HAMMER FALL (IN)	---	30	---

DRILLING EQUIPMENT & PROCEDURES

RIG TYPE: ATV, track-mounted
BIT TYPE: ---
DRILL MUD: ---
OTHER: Advanced augers to 13.0 ft.

ELEVATION: 406.06
DATUM: NGVD
START: 22 January 1991
FINISH: 22 January 1991
DRILLER: B. Waters
H&A REP: M. Corrigan

DEPTH (FT)	CASING BLOWS PER FT	SAMPLER BLOWS PER 6 IN	SAMPLE NUMBER & RECOVERY	SAMPLE DEPTH (FT)	STRATA CHANGE (FT)	VISUAL CLASSIFICATION AND REMARKS
		2 1 1 1	S1 10"/24"	0.0 2.0		Very loose brown silty fine SAND, little clay, trace organics, moist. -LACUSTRINE-
5		4 5 8 9	S2 20"/24"	5.0 7.0		Medium dense brown silty fine SAND, wet. -LACUSTRINE-
10		5 9 7 7	S3 19"/24"	10.0 12.0		Medium dense brown fine SAND, trace medium sand, wet. -LACUSTRINE-
15						Bottom of Boring at 13.0 ft. Notes: 1. Installed monitoring well in completed borehole. 2. See Overburden Observation Well Report.
20						
25						

WATER LEVEL DATA					
DATE	TIME	ELAPSED TIME (HR)	DEPTH (FT) TO: BOTTOM OF CASING	DEPTH (FT) TO: BOTTOM OF HOLE	DEPTH (FT) TO: WATER

SAMPLE IDENTIFICATION

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon

SUMMARY

OVERBURDEN (LIN FT): 13.0 ft.
ROCK CORED (LIN FT): ---
SAMPLES: 3S
BORING NO. B291

H&A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists	TEST BORING REPORT	BORING NO. B292

PROJECT: ROTH BROS. SMELTING CORPORATION - PHASE II
CLIENT: NIXON HARGRAVE DEVANS & DOYLE
CONTRACTOR: PARRATT-WOLFF, INC.

FILE NO. 70185-42
SHEET NO. 1 OF 1
LOCATION: See Plan

ITEM	CASING	DRIVE SAMPLER	CORE BARREL
TYPE	Auger	S	---
INSIDE DIAMETER (IN)	4-1/4	1-3/8	---
HAMMER WEIGHT (LB)	---	140	---
HAMMER FALL (IN)	---	30	---

DRILLING EQUIPMENT & PROCEDURES

RIG TYPE: Mobile B-56, truck-mounted
BIT TYPE: ---
DRILL MUD: ---
OTHER: Advanced augers to 13.0 ft.

ELEVATION: 409.50
DATUM: NGVD
START: 22 January 1991
FINISH: 22 January 1991
DRILLER: B. Waters
H&A REP: M. Corrigan

DEPTH (FT)	CASING BLOWS PER FT	SAMPLER BLOWS PER 6 IN	SAMPLE NUMBER & RECOVERY	SAMPLE DEPTH (FT)	STRATA CHANGE (FT)	VISUAL CLASSIFICATION AND REMARKS
		3 4 4 3	S1 14"/24"	0.0 2.0	3.5	Loose gray-brown silty fine SAND, little coarse sand, little gravel, with metal fragments, wet. -FILL-
5		2 2 2 2	S2 12"/24"	5.0 7.0		Loose yellow-brown fine SAND, trace medium sand, wet. -LACUSTRINE-
10		2 4 6 7	S3 20"/24"	10.0 12.0		Loose yellow-brown silty fine SAND, wet. -LACUSTRINE-
15						Bottom of Boring at 13.0 ft. Notes: 1. Installed monitoring well in completed borehole. 2. See Overburden Observation Well Report.
20						
25						

WATER LEVEL DATA

DATE	TIME	ELAPSED TIME (HR)	DEPTH (FT) TO: BOTTOM OF CASING	BOTTOM OF HOLE	WATER
1/21/91	1145	---	12.16 ft.	13.0 ft.	9.98 ft.
1/22/91	0910	21 hr.	12.16 ft.	13.0 ft.	5.70 ft.

SAMPLE IDENTIFICATION

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon

SUMMARY

OVERBURDEN (LIN FT):	13.0 ft.
ROCK CORED (LIN FT):	---
SAMPLES:	3S
BORING NO.	B292

H&A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists	TEST BORING REPORT	BORING NO. B293

PROJECT: ROTH BROS. SMELTING CORPORATION - PHASE II
CLIENT: NIXON HARGRAVE DEVANS & DOYLE
CONTRACTOR: PARRATT-WOLFF, INC.

FILE NO. 70185-42
SHEET NO. 1 OF 1
LOCATION: See Plan

ITEM	CASING	DRIVE SAMPLER	CORE BARREL
TYPE	Auger	S	---
INSIDE DIAMETER (IN)	4-1/4	1-3/8	---
HAMMER WEIGHT (LB)	---	140	---
HAMMER FALL (IN)	---	30	---

DRILLING EQUIPMENT & PROCEDURES

RIG TYPE: ATV, track-mounted
BIT TYPE: ---
DRILL MUD: ---
OTHER: Advanced augers to 13.0 ft.

ELEVATION: 407.47
DATUM: NGVD
START: 22 January 1991
FINISH: 22 January 1991
DRILLER: B. Waters
H&A REP: M. Corrigan

DEPTH (FT)	CASING BLOWS PER FT	SAMPLER BLOWS PER 6 IN	SAMPLE NUMBER & RECOVERY	SAMPLE DEPTH (FT)	STRATA CHANGE (FT)	VISUAL CLASSIFICATION AND REMARKS
		WOH WOH 1 2	S1 1"/24"	0.0 2.0		Very loose brown fine SAND, some coarse sand, some gravel, wet. -LACUSTRINE-
5		3 5 6 7	S2 21"/24"	5.0 7.0		Stiff brown clayey fine SAND, moist. -LACUSTRINE-
10		3 4 8 8	S3 18"/24"	10.0 12.0		Medium dense brown SILT, with medium to fine sand layer at 11.8 ft., wet. -LACUSTRINE-
15						Bottom of boring at 13.0 ft. Notes: 1. Installed monitoring well in completed borehole. 2. See Overburden Observation Well Report.
20						
25						

WATER LEVEL DATA					
DATE	TIME	ELAPSED TIME (HR)	DEPTH (FT) TO: BOTTOM OF CASING	BOTTOM OF HOLE	WATER

SAMPLE IDENTIFICATION

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon

SUMMARY

OVERBURDEN (LIN FT): 13.0 ft.
ROCK CORED (LIN FT): ---
SAMPLES: 3S
BORING NO. B293

APPENDIX B

Test Pit Reports

H&A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists	TEST PIT REPORT	TEST PIT NO. 201 FILE NO. 70185-42

PROJECT:	ROTH BROS. SMELTING CORPORATION - PHASE II	LOCATION:	See Plan
LOCATION:			
CLIENT:	NIXON HARGRAVE DEVANS & DOYLE	ELEVATION:	
CONTRACTOR:	PARATT-WOLFF, INC.	EXPLORATION DATE:	2 Nov. 1990
EQUIPMENT USED:	CASE 580K EXTENDAHOE	H&A REP.:	W. Lanik

SCALE IN FEET	SAMPLE NUMBER	SAMPLE DEPTH RANGE	STRATA CHANGE	DESCRIPTION OF MATERIALS	REMARKS
				Dark brown sandy SILT, trace gravel, with wood fragments and metal.	
				-FILL-	
			1.5		
2	J1	1.5		-ASH- (J1)	
		2.5	2.5		
	J2	2.5-3.0		Dark brown organic SILT (DITCH).	Noted ammonia smell in pit.
				Light brown interbedded fine SAND and SILT.	
4				-LACUSTRINE-	
6					
8				Bottom of Exploration from 4.0 to 8.0 ft.	
10				Length of Trench 35 ft.	
				South — North	
12					

WATER LEVEL		
DATE	TIME*	DEPTH FT
11/02/90	1.0	5.0

* Hrs after completed

APPROXIMATE PIT DIMENSIONS AT SURFACE

LENGTH 35.0 feet WIDTH 3.0 feet

BOULDERS

8" to 18" DIAMETER: No. = Vol. cu ft

Over 18" DIAMETER: No. = Vol. cu ft

SUMMARY

DEPTH:	4-8 ft.
JAR SAMPLES:	2
BAG SAMPLES:	-
WATER LEVEL:	5.0 ft.
TEST PIT NO.	TP201

H&A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists	TEST PIT REPORT	TEST PIT NO. 202 FILE NO. 70185-42

PROJECT: ROTH BROS. SMELTING CORPORATION - PHASE II
LOCATION:
CLIENT: NIXON HARGRAVE DEVANS & DOYLE
CONTRACTOR: PARATT-WOLFF, INC.
EQUIPMENT USED: CASE 580K EXTENDAHOE

LOCATION: See Plan
ELEVATION:
EXPLORATION DATE: 2 Nov. 1990
H&A REP.: W. Lanik

SCALE IN FEET	SAMPLE NUMBER	SAMPLE DEPTH RANGE	STRATA CHANGE	DESCRIPTION OF MATERIALS	REMARKS
				Dark brown sandy SILT, trace gravel, with wood fragments, brick pieces, and scrap metal.	
				-FILL-	
2					
	J1	2.5-3.0			
			3.0	DITCH (?)	
			3.5		
4				-LACUSTRINE-	
				Light brown fine SAND.	
6				Bottom of Exploration from 4.0 to 6.0 ft.	
8					
10				Length of Trench 20 ft.	
12					

WATER LEVEL

DATE	TIME*	DEPTH FT
11/02/90	1.0	4.5

* Hrs after completed

APPROXIMATE PIT DIMENSIONS AT SURFACE

LENGTH 20.0 feet WIDTH 3.0 feet

BOULDERS

8" to 18" DIAMETER: No. = Vol. cu ft

Over 18" DIAMETER: No. = Vol. cu ft

SUMMARY

DEPTH: 4-6 ft.
JAR SAMPLES: 1
BAG SAMPLES: -
WATER LEVEL: 4.5 ft.
TEST PIT NO. TP202

APPENDIX C

Observation Well Reports and Groundwater Level Monitoring Reports

H&A OF NEW YORK
CONSULTING GEOTECHNICAL ENGINEERS
GEOLOGISTS AND HYDROGEOLOGISTS

OVERBURDEN GROUNDWATER MONITORING WELL REPORT

PROJECT: ROTH BROS. SMELTING CORPORATION - PHASE II
LOCATION: EAST SYRACUSE, NEW YORK
CLIENT: NIXON HARGRAVE DEVANS & DOYLE
CONTRACTOR: PARRATT-WOLFF, INC.
DRILLER: D. RICHMOND RIG TYPE:
INSTALLATION DATE: 31 OCTOBER 1990

FILE NO.: 70185-42
WELL NO.: B273-OW
LOCATION: See Plan

SHEET: 1 OF 2
INSPECTOR: W. Lanik

Survey Datum NGVD

Ground Elevation: 417.00

SUMMARIZE STOIL CONDITIONS

-CONCRETE- 1.0 ft.
-FILL- 5.3 ft.
-BURIED TOPSOIL- 7.7 ft.
-GLACIAL TILL- 13.5 ft.

-CONCRETE- 0.5 ft.
-QUARTZ SAND- 2.0 ft.
-BENTONITE PELLETS- 6.8 ft.
-QUARTZ SAND- 13.5 ft.

Stickup above ground surface of protective casing.	0.00 ft.
Stickup below ground surface of riser pipe.	0.32 ft.
Thickness of Surface Seal	0.5 ft.
Type of Surface Seal [indicated all seals showing depth, thickness and type]	Concrete/Bentonite
Type of Protective Casing	Roadway Box
Inside Diameter of Protective Casing	9.0 in.
Depth of Bottom of Protective Casing	0.6 ft.
Inside Diameter of Riser Pipe	2.0 in.
Type of Backfill Around Riser	Quartz Sand
Diameter of Borehole	8.0 in.
Type of coupling (threaded, welded, etc.)	Threaded
Depth of Bottom of Riser	8.8 ft.
Type of Wellscreen	PVC
Screen Slot Size	0.01 in.
Diameter of Wellscreen	2.0 in.
Type of Backfill Around Wellscreen	Quartz Sand
Depth of Bottom of Wellscreen	13.5 ft.
Depth of Bottom of Borehole	13.5 ft.

Remarks:

Well No. B273-OW

H&A OF NEW YORK CONSULTING GEOTECHNICAL ENGINEERS GEOLOGISTS AND HYDROGEOLOGISTS	GROUNDWATER LEVEL MONITORING REPORT

WELL NUMBER: B273-OW	GROUND/TOP OF CASING ELEVATION: 417.00/416.68 ft.	FILE NO. 70185-42 PAGE NO. 2

DATE	TIME	ELAPSED TIME	DEPTH OF WATER FROM T.O.R.	ELEVATION OF WATER	REMARKS	READ BY
11/01/90	1245	1 day	3.51 ft.	413.17 ft.	Time from installation.	WL
11/05/90	1130	4 days	3.26 ft.	413.42 ft.		WL
11/07/90	1120	2 days	3.36 ft.	413.32 ft.	Prior to development (dev. 1 hr./9 gal.)	WL
11/09/90	0840	2 days	3.46 ft.	413.22 ft.		WL
1/24/91	1100	77 days	3.52 ft.	413.16 ft.		MJC

H&A OF NEW YORK CONSULTING GEOTECHNICAL ENGINEERS GEOLOGISTS AND HYDROGEOLOGISTS	OVERBURDEN GROUNDWATER MONITORING WELL REPORT

PROJECT:	ROTH BROS. SMELTING CORPORATION - PHASE II	FILE NO.:	70185-42
LOCATION:	EAST SYRACUSE, NEW YORK	WELL NO.:	B277-OW
CLIENT:	NIXON HARGRAVE DEVANS & DOYLE	LOCATION:	See Plan
CONTRACTOR:	PARRATT-WOLFF, INC.		
DRILLER:	D. RICHMOND RIG TYPE:	SHEET:	1 OF 2
INSTALLATION DATE:	1 NOVEMBER 199	INSPECTOR:	W. Lanik

Survey Datum NGVD

Ground Elevation: 413.81

SUMMARIZED SOIL CONDITIONS

-FILL- 0.5 ft.

-CONCRETE- 2.0 ft.

-BENTONITE PELLETS- 3.4 ft.

-GLACIAL TILL- 4.8 ft.

-QUARTZ SAND-

-LACUSTRINE- 9.8 ft.

Stickup above ground surface of protective casing.	3.00 ft.
Stickup above ground surface of riser pipe.	2.82 ft.
Thickness of Surface Seal	3.4 ft.
Type of Surface Seal [indicated all seals showing depth, thickness and type]	Concrete/ Bentonite
Type of Protective Casing	Steel Protective
Inside Diameter of Protective Casing	4.0 in.
Depth of Bottom of Protective Casing	1.3 ft.
Inside Diameter of Riser Pipe	2.0 in.
Type of Backfill Around Riser	Quartz Sand
Diameter of Borehole	8.0 in.
Type of coupling (threaded, welded, etc.)	Threaded
Depth of Bottom of Riser	4.45 ft.
Type of Wellscreen	PVC
Screen Slot Size	0.01 in.
Diameter of Wellscreen	2.0 in.
Type of Backfill Around Wellscreen	Quartz Sand
Depth of Bottom of Wellscreen	9.45 ft.
Depth of Bottom of Borehole	9.80 ft.

Remarks:

H&A OF NEW YORK CONSULTING GEOTECHNICAL ENGINEERS GEOLOGISTS AND HYDROGEOLOGISTS	GROUNDWATER LEVEL MONITORING REPORT

WELL NUMBER: B277-OW	GROUND/TOP OF CASING ELEVATION: 413.81/416.63 ft.	FILE NO. 70185-42 PAGE NO. 2

DATE	TIME	ELAPSED TIME	DEPTH OF WATER FROM T.O.R.	ELEVATION OF WATER	REMARKS	READ BY
11/01/90	1200	3 hrs.	7.10 ft.	409.53 ft.	Time from installation.	WL
11/06/90	1100	5 days	7.40 ft.	409.23 ft.	Prior to development (dev. 1.0 hrs./12 gal.)	WL
11/06/90	1230	1.5 hrs.	7.46 ft.	409.17 ft.		WL
11/07/90	1100	1 day	7.18 ft.	409.45 ft.		WL
1/24/91	1045	79 days	7.42 ft.	409.21 ft.		MJC

H&A OF NEW YORK
CONSULTING GEOTECHNICAL ENGINEERS
GEOLOGISTS AND HYDROGEOLOGISTS

OVERBURDEN GROUNDWATER MONITORING WELL REPORT

PROJECT: ROTH BROS. SMELTING CORPORATION - PHASE II
LOCATION: EAST SYRACUSE, NEW YORK
CLIENT: NIXON HARGRAVE DEVANS & DOYLE
CONTRACTOR: PARRATT-WOLFF, INC.
DRILLER: D. RICHMOND RIG TYPE:
INSTALLATION DATE: 1-2 NOVEMBER 1990

FILE NO.: 70185-42
WELL NO.: B278-OW
LOCATION: See Plan

SHEET: 1 OF 2
INSPECTOR: W. Lanik

Survey Datum NGVD

Ground Elevation: 409.64

SUMMARIZE SOIL CONDITIONS

-CONCRETE- 0 to 2.0 ft.
-FILL- 2.0 to 3.0 ft.
-LACUSTRINE- 3.0 to 12.7 ft.
-BENTONITE PELLETS- 6.0 to 8.1 ft.
-QUARTZ SAND- 8.1 to 12.7 ft.

Stickup above ground surface of protective casing.	2.60 ft.
Stickup above ground surface of riser pipe.	2.40 ft.
Thickness of Surface Seal	6.0 ft.
Type of Surface Seal [indicated all seals showing depth, thickness and type]	Concrete/ Bentonite
Type of Protective Casing	Steel Protective
Inside Diameter of Protective Casing	4.0 in.
Depth of Bottom of Protective Casing	1.7 ft.
Inside Diameter of Riser Pipe	2.0 in.
Type of Backfill Around Riser	Quartz Sand
Diameter of Borehole	8.0 in.
Type of coupling (threaded, welded, etc.)	Threaded
Depth of Bottom of Riser	8.1 ft.
Type of Wellscreen	PVC
Screen Slot Size	0.01 in.
Diameter of Wellscreen	2.0 in.
Type of Backfill Around Wellscreen	Quartz Sand
Depth of Bottom of Wellscreen	12.7 ft.
Depth of Bottom of Borehole	12.7 ft.

Remarks:

Well No. B278-OW

H&A OF NEW YORK CONSULTING GEOTECHNICAL ENGINEERS GEOLOGISTS AND HYDROGEOLOGISTS	GROUNDWATER LEVEL MONITORING REPORT

WELL NUMBER: B278-OW	GROUND/TOP OF CASING ELEVATION: 409.64/412.04	FILE NO. 70185-42 PAGE NO. 2

DATE	TIME	ELAPSED TIME	DEPTH OF WATER FROM T.O.R.	ELEVATION OF WATER	REMARKS	READ BY
11/02/90	1400	5 hrs.	5.44 ft.	406.60	time from installation	WL
11/06/90	1115	4 days	5.31 ft.	406.73	prior to development (dev. 1.0 hrs./12 gal.)	WL
11/07/90	1107	1 day	5.36 ft.	406.68		WL
1/24/91	1000	79 days	5.45 ft.	406.59		MJC

H&A OF NEW YORK
CONSULTING GEOTECHNICAL ENGINEERS
GEOLOGISTS AND HYDROGEOLOGISTS

OVERBURDEN GROUNDWATER MONITORING WELL REPORT

PROJECT: ROTH BROS. SMELTING CORPORATION - PHASE II
LOCATION: EAST SYRACUSE, NEW YORK
CLIENT: NIXON HARGRAVE DEVANS & DOYLE
CONTRACTOR: PARRATT-WOLFF, INC.
DRILLER: D. RICHMOND RIG TYPE:
INSTALLATION DATE: 1 NOVEMBER 1990

FILE NO.: 70185-42
WELL NO.: B279-OW
LOCATION: See Plan

SHEET: 1 OF 2
INSPECTOR: W. Lanik

Survey Datum NGVD

Ground Elevation: 410.70

SUMMARIZED SOIL CONDITIONS

	0.0 ft.	
-FILL-		-CONCRETE-
2.0 ft.	2.0 ft.	
		-BENTONITE PELLETS-
	4.0 ft.	
-LACUSTRINE-		
		-QUARTZ SAND-
	10.0 ft.	

Stickup above ground surface of protective casing.	2.70 ft.
Stickup above ground surface of riser pipe.	2.49 ft.
Thickness of Surface Seal	4.0 ft.
Type of Surface Seal [indicated all seals showing depth, thickness and type]	Concrete/Bentonite
Type of Protective Casing	Steel Protective
Inside Diameter of Protective Casing	4.0 in.
Depth of Bottom of Protective Casing	1.6 ft.
Inside Diameter of Riser Pipe	2.0 in.
Type of Backfill Around Riser	Quartz Sand
Diameter of Borehole	8.0 in. +/-
Type of coupling (threaded, welded, etc.)	Threaded
Depth of Bottom of Riser	5.15 ft.
Type of Wellscreen	PVC
Screen Slot Size	0.01 in.
Diameter of Wellscreen	2.0 in.
Type of Backfill Around Wellscreen	Quartz Sand
Depth of Bottom of Wellscreen	9.95 ft.
Depth of Bottom of Borehole	10.0 ft.

Remarks:

H&A OF NEW YORK
CONSULTING GEOTECHNICAL ENGINEERS
GEOLOGISTS AND HYDROGEOLOGISTS

GROUNDWATER LEVEL MONITORING REPORT

WELL NUMBER: B279-OW

GROUND/TOP OF CASING ELEVATION: 410.70/413.19

FILE NO. 70185-42
PAGE NO. 2

DATE	TIME	ELAPSED TIME	DEPTH OF WATER FROM T.O.R.	ELEVATION OF WATER	REMARKS	READ BY
11/02/90	0800	17 hrs.	7.14 ft.	406.05	Time from installation	WL
11/02/90	0820	20 min.	6.70 ft.	406.49		WL
11/02/90	1645	8 hrs.	6.24 ft.	406.95		WL
11/06/90	1130	4 days	6.24 ft.	406.95	Prior to development (dev. 1.0 hr./8 gal.)	WL
11/07/90	1109	1 day	6.14 ft.	407.05		WL
1/24/91	0900	79 days	5.61 ft.	407.58		MJC

H&A OF NEW YORK
CONSULTING GEOTECHNICAL ENGINEERS
GEOLOGISTS AND HYDROGEOLOGISTS

OVERBURDEN GROUNDWATER MONITORING WELL REPORT

PROJECT: ROTH BROS. SMELTING CORPORATION - PHASE II
LOCATION: EAST SYRACUSE, NEW YORK
CLIENT: NIXON HARGRAVE DEVANS & DOYLE
CONTRACTOR: PARRATT-WOLFF, INC.
DRILLER: D. RICHMOND RIG TYPE:
INSTALLATION DATE: 1 NOVEMBER 1990

FILE NO.: 70185-42
WELL NO.: B280-OW
LOCATION: See Plan
SHEET: 1 OF 2
INSPECTOR: W. Lanik

Survey Datum NGVD

Ground Elevation: 407.21

SUMMARIZE Soil Conditions

0.0 ft.	-FILL-
1.0 ft.	-CONCRETE-
	BURIED -TOPSOIL-
2.0 ft.	
2.2 ft.	
	-BENTONITE PELLETS-
4.0 ft.	
	-LACUSTRINE-
	-QUARTZ SAND-
10.0 ft.	

Stickup above ground surface of protective casing.	3.00 ft.
Stickup above ground surface of riser pipe.	2.80 ft.
Thickness of Surface Seal	4.0 ft.
Type of Surface Seal [indicated all seals showing depth, thickness and type]	Concrete/Bentonite
Type of Protective Casing	Steel Protective
Inside Diameter of Protective Casing	4.0 in.
Depth of Bottom of Protective Casing	1.3 ft.
Inside Diameter of Riser Pipe	2.0 in.
Type of Backfill Around Riser	Quartz Sand
Diameter of Borehole	8.0 in. +/-
Type of coupling (threaded, welded, etc.)	Threaded
Depth of Bottom of Riser	5.72 ft.
Type of Wellscreen	PVC
Screen Slot Size	0.01 in.
Diameter of Wellscreen	2.0 in.
Type of Backfill Around Wellscreen	Quartz Sand
Depth of Bottom of Wellscreen	9.72 ft.
Depth of Bottom of Borehole	10.0 ft.

Remarks:

Well No. B280-OW

H&A OF NEW YORK CONSULTING GEOTECHNICAL ENGINEERS GEOLOGISTS AND HYDROGEOLOGISTS	GROUNDWATER LEVEL MONITORING REPORT

WELL NUMBER: B280-OW	GROUND/TOP OF CASING ELEVATION: 407.21/410.01	FILE NO. 70185-42 PAGE NO. 2

DATE	TIME	ELAPSED TIME	DEPTH OF WATER FROM T.O.R.	ELEVATION OF WATER	REMARKS	READ BY
11/01/90	1400	2 hrs.	4.20 ft.	405.81	Time from installation	WL
11/05/90	0830	4 days	4.39 ft.	405.62		WL
11/06/90	1150	1 day	4.01 ft.	406.00	Prior to development (dev. 1.0 hrs./17 gal.)	WL
11/07/90	1111	1 day	4.17 ft.	405.84		WL
1/24/91	0800	79 days	4.09 ft.	405.92		MJC

H&A OF NEW YORK
CONSULTING GEOTECHNICAL ENGINEERS
GEOLOGISTS AND HYDROGEOLOGISTS

OVERBURDEN GROUNDWATER MONITORING WELL REPORT

PROJECT: ROTH BROS. SMELTING CORPORATION - PHASE II
LOCATION: EAST SYRACUSE, NEW YORK
CLIENT: NIXON HARGRAVE DEVANS & DOYLE
CONTRACTOR: PARRATT-WOLFF, INC.
DRILLER: D. RICHMOND RIG TYPE:
INSTALLATION DATE: 5 NOVEMBER 1990

FILE NO.: 70185-42
WELL NO.: B281-OW
LOCATION: See Plan
SHEET: 1 OF 2
INSPECTOR: W. Lanik

Survey Datum NGVD

Ground Elevation: 420.13

SUMMARIZE SOIL CONDITIONS

0.0 ft. -CONCRETE-
2.0 ft.
-FILL-
2.2 ft.
-BENTONITE PELLETS-
4.0 ft.
-GLACIAL TILL-
-QUARTZ SAND-
10.0 ft.

Stickup above ground surface of protective casing.	3.32 ft.
Stickup above ground surface of riser pipe.	3.10 ft.
Thickness of Surface Seal	4.0 ft.
Type of Surface Seal [indicated all seals showing depth, thickness and type]	Concrete/Bentonite
Type of Protective Casing	Steel Protective
Inside Diameter of Protective Casing	4.0 in.
Depth of Bottom of Protective Casing	1.0 ft.
Inside Diameter of Riser Pipe	2.0 in.
Type of Backfill Around Riser	Quartz Sand
Diameter of Borehole	8.0 in. +/-
Type of coupling (threaded, welded, etc.)	Threaded
Depth of Bottom of Riser	4.80 ft.
Type of Wellscreen	PVC
Screen Slot Size	0.01 in.
Diameter of Wellscreen	2.0 in.
Type of Backfill Around Wellscreen	Quartz Sand
Depth of Bottom of Wellscreen	9.90 ft.
Depth of Bottom of Borehole	10.0 ft.

Remarks:

Well No. B281-OW

H&A OF NEW YORK CONSULTING GEOTECHNICAL ENGINEERS GEOLOGISTS AND HYDROGEOLOGISTS	GROUNDWATER LEVEL MONITORING REPORT

WELL NUMBER: B281-OW	GROUND/TOP OF CASING ELEVATION: 420.13/423.23	FILE NO. 70185-42 PAGE NO. 2

DATE	TIME	ELAPSED TIME	DEPTH OF WATER FROM T.O.R.	ELEVATION OF WATER	REMARKS	READ BY
11/06/90	1015	1 day	3.20 ft.	420.03	Time from installation prior to development. (dev. 1.0 hr/19 gal)	WL
11/06/90	1500	5 hrs.	5.40 ft.	417.83		WL
11/07/90	1145	1 day	3.68 ft.	419.55		WL
1/24/91	0845	79 days	4.45 ft.	418.78		MJC

H&A OF NEW YORK CONSULTING GEOTECHNICAL ENGINEERS GEOLOGISTS AND HYDROGEOLOGISTS	OVERBURDEN GROUNDWATER MONITORING WELL REPORT

PROJECT:	ROTH BROS. SMELTING CORPORATION - PHASE II	FILE NO.:	70185-42
LOCATION:	EAST SYRACUSE, NEW YORK	WELL NO.:	B286-OW
CLIENT:	NIXON HARGRAVE DEVANS & DOYLE	LOCATION:	See Plan
CONTRACTOR:	PARRATT-WOLFF, INC.		
DRILLER:	D. RICHMOND RIG TYPE:	SHEET:	1 OF 2
INSTALLATION DATE:	5 NOVEMBER 1990	INSPECTOR:	W. Lanik

Survey Datum NGVD

Ground Elevation: 414.24

SUMMARIZE SOIL CONDITIONS

-FILL- 0.5 ft.

-GLACIAL TILL-

0.0 ft.

-CONCRETE-

2.0 ft.

-BENTONITE PELLETS-

4.0 ft.

-QUARTZ SAND-

10.0 ft.

Stickup above ground surface of protective casing.	2.35 ft.
Stickup above ground surface of riser pipe.	2.10 ft.
Thickness of Surface Seal	4.0 ft.
Type of Surface Seal [indicated all seals showing depth, thickness and type]	Concrete/Bentonite
Type of Protective Casing	Steel Protective
Inside Diameter of Protective Casing	4.0 in.
Depth of Bottom of Protective Casing	1.95 ft.
Inside Diameter of Riser Pipe	2.0 in.
Type of Backfill Around Riser	Quartz Sand
Diameter of Borehole	8.0 in. +/-
Type of coupling (threaded, welded, etc.)	Threaded
Depth of Bottom of Riser	4.47 ft.
Type of Wellscreen	PVC
Screen Slot Size	0.01 in.
Diameter of Wellscreen	2.0 in.
Type of Backfill Around Wellscreen	Quartz Sand
Depth of Bottom of Wellscreen	9.47 ft.
Depth of Bottom of Borehole	10.0 ft.

Remarks:

Well No. B286-OW

H&A OF NEW YORK CONSULTING GEOTECHNICAL ENGINEERS GEOLOGISTS AND HYDROGEOLOGISTS	GROUNDWATER LEVEL MONITORING REPORT

WELL NUMBER: B286-OW	GROUND/TOP OF CASING ELEVATION: 414.24/416.34	FILE NO. 70185-42 PAGE NO. 2

DATE	TIME	ELAPSED TIME	DEPTH OF WATER FROM T.O.R.	ELEVATION OF WATER	REMARKS	READ BY
11/05/90	1500	---	Dry	---	Installation completed	WL
11/07/90	1055	2 days	9.90 ft.	406.44	Prior to development (dev. 1/2 hrs/1.5 gal-dry)	WL
11/09/90	1440	2 days	10.15 ft.	406.19		WL
1/24/91	0915	77 days	4.45 ft.	411.89		MJC

H&A OF NEW YORK
CONSULTING GEOTECHNICAL ENGINEERS
GEOLOGISTS AND HYDROGEOLOGISTS

OVERBURDEN GROUNDWATER MONITORING WELL REPORT

PROJECT: ROTH BROS. SMELTING CORPORATION - PHASE II
LOCATION: EAST SYRACUSE, NEW YORK
CLIENT: NIXON HARGRAVE DEVANS & DOYLE
CONTRACTOR: PARRATT-WOLFF, INC.
DRILLER: D. RICHMOND RIG TYPE:
INSTALLATION DATE: 2 NOVEMBER 1990

FILE NO.: 70185-42
WELL NO.: B287-OW
LOCATION: See Plan

SHEET: 1 OF 2
INSPECTOR: W. Lanik

Survey Datum NGVD

Ground Elevation: 412.98

SUMMARIZE SOIL CONDITIONS

0.0 ft.	-CONCRETE-
ASPHALT WITH GRAVEL SUB-BASE	0.5 ft.
1.5 ft.	-QUARTZ SAND- 1.5 ft.
-LACUSTRINE-	-BENTONITE PELLETS- 2.5 ft.
5.0 ft.	-QUARTZ SAND-
-GLACIAL TILL-	10.0 ft.

Stickup above ground surface of protective casing.	0.00 ft.
Depth below ground surface of riser pipe.	0.28 ft.
Thickness of Surface Seal	0.5 ft.
Type of Surface Seal [indicated all seals showing depth, thickness and type]	Concrete/Bentonite
Type of Protective Casing	Roadway Box
Inside Diameter of Protective Casing	9.0 in.
Depth of Bottom of Protective Casing	0.6 ft.
Inside Diameter of Riser Pipe	2.0 in.
Type of Backfill Around Riser	Quartz Sand
Diameter of Borehole	8.0 in. +/-
Type of coupling (threaded, welded, etc.)	Threaded
Depth of Bottom of Riser	2.95 ft.
Type of Wellscreen	PVC
Screen Slot Size	0.01 in.
Diameter of Wellscreen	2.0 in.
Type of Backfill Around Wellscreen	Quartz Sand
Depth of Bottom of Wellscreen	9.95 ft.
Depth of Bottom of Borehole	10.0 ft.

Remarks:

Well No. B287-OW

H&A OF NEW YORK CONSULTING GEOTECHNICAL ENGINEERS GEOLOGISTS AND HYDROGEOLOGISTS	GROUNDWATER LEVEL MONITORING REPORT

WELL NUMBER: B287-OW	GROUND/TOP OF CASING ELEVATION: 419.98/412.70	FILE NO. 70185-42 PAGE NO. 2

DATE	TIME	ELAPSED TIME	DEPTH OF WATER FROM T.O.R.	ELEVATION OF WATER	REMARKS	READ BY
11/02/90	1300	1 hr.	Dry	---	Time from installation	WL
11/05/90	1000	3 days	0.40 ft.	412.30		WL
11/06/90	1030	1 day	0.20 ft.	412.50	Prior to development (dev. 4 gal/0.25 hrs.-clean)	WL
11/07/90	1040	1 day	0.62 ft.	412.08		WL
11/08/90	1350	1 day	0.66 ft.	412.04		WL
1/24/91	1015	78 days	1.87 ft.	410.83		MJC

H&A OF NEW YORK
CONSULTING GEOTECHNICAL ENGINEERS
GEOLOGISTS AND HYDROGEOLOGISTS

OVERBURDEN GROUNDWATER MONITORING WELL REPORT

PROJECT: ROTH BROS. SMELTING CORPORATION - PHASE II
LOCATION: EAST SYRACUSE, NEW YORK
CLIENT: NIXON HARGRAVE DEVANS & DOYLE
CONTRACTOR: PARRATT-WOLFF, INC.
DRILLER: D. RICHMOND RIG TYPE:
INSTALLATION DATE: 5-6 NOVEMBER 1990

FILE NO.: 70185-42
WELL NO.: B290-OW
LOCATION: See Plan

SHEET: 1 OF 2
INSPECTOR: W. Lanik

Survey Datum NGVD

Ground Elevation: 411.70

SUMMARIZED SOIL CONDITIONS

0.0 ft.	-CONCRETE-
0.5 ft.	-FILL-
2.3 ft.	-LACUSTRINE-
4.0 ft.	-GLACIAL TILL-
10.5 ft.	

-BENTONITE PELLETS- (1.5 ft.)

-QUARTZ SAND-

Stickup above ground surface of protective casing.	2.90 ft.
Stickup above ground surface of riser pipe.	2.80 ft.
Thickness of Surface Seal	1.5 ft.
Type of Surface Seal [indicated all seals showing depth, thickness and type]	Concrete/Bentonite
Type of Protective Casing	Steel Protective
Inside Diameter of Protective Casing	4.0 in.
Depth of Bottom of Protective Casing	1.4 in.
Inside Diameter of Riser Pipe	2.0 in.
Type of Backfill Around Riser	Quartz Sand
Diameter of Borehole	8.0 in. +/-
Type of coupling (threaded, welded, etc.)	Threaded
Depth of Bottom of Riser	1.7 ft.
Type of Wellscreen	PVC
Screen Slot Size	0.01 in.
Diameter of Wellscreen	2.0 in.
Type of Backfill Around Wellscreen	Quartz Sand
Depth of Bottom of Wellscreen	10.4 ft.
Depth of Bottom of Borehole	10.5 ft.

Remarks:

H&A OF NEW YORK CONSULTING GEOTECHNICAL ENGINEERS GEOLOGISTS AND HYDROGEOLOGISTS	GROUNDWATER LEVEL MONITORING REPORT

WELL NUMBER: B290-OW	GROUND/TOP OF CASING ELEVATION: 411.70/414.50	FILE NO. 70185-42 PAGE NO. 2

DATE	TIME	ELAPSED TIME	DEPTH OF WATER FROM T.O.R.	ELEVATION OF WATER	REMARKS	READ BY
11/06/90	0900	---	5.60 ft.	408.90	Installation completed prior to development. (dev. 1 hr/60 gal.)	WL
11/06/90	1000	1 hr.	5.67 ft.	408.83		WL
11/07/90	0800	1 day	5.70 ft.	408.80		WL
11/09/90	0930	2 days	5.72 ft.	408.78		WL
1/24/91	0920	77 days	5.60 ft.	408.90		MJC

H&A OF NEW YORK
CONSULTING GEOTECHNICAL ENGINEERS
GEOLOGISTS AND HYDROGEOLOGISTS

OVERBURDEN GROUNDWATER MONITORING WELL REPORT

PROJECT: ROTH BROS. SMELTING CORP. - PHASE II
LOCATION: EAST SYRACUSE, NEW YORK
CLIENT: NIXON, HARGRAVE, DEVANS AND DOYLE
CONTRACTOR: PARRATT-WOLF, INC.
DRILLER: B. WATERS RIG TYPE: ATV, TRACK-MOUNTED
INSTALLATION DATE: 22 JANUARY 1991

FILE NO.: 70185-42
WELL NO.: B291-OW
LOCATION: SEE PLAN

SHEET: 1 OF 2
H&A REP: M. CORRIGAN

Survey Datum NGVD

Ground Elevation: 406.06

SUMMARIZED SOIL CONDITIONS

-CONCRETE-	3.0 ft.	
-LACUSTRINE- -BENTONITE PELLETS-	5.0 ft.	
-QUARTZ SAND-	13.0 ft.	

Stickup above ground surface of protective casing.	2.00 ft.
Stickup above ground surface of riser pipe.	1.75 ft.
Thickness of Surface Seal	5.0 ft.
Type of Surface Seal [indicated all seals showing depth, thickness and type]	Concrete/Bentonite
Type of Protective Casing	Steel Protective
Inside Diameter of Protective Casing	4.0 in.
Depth of Bottom of Protective Casing	2.0 ft.
Inside Diameter of Riser Pipe	2.0 in.
Type of Backfill Around Riser	Quartz Sand
Diameter of Borehole	4.0 in.
Type of coupling (threaded, welded, etc.)	Threaded
Depth of Bottom of Riser	7.48 ft.
Type of Wellscreen	PVC
Screen Slot Size	0.01 in.
Diameter of Wellscreen	2.0 in.
Type of Backfill Around Wellscreen	Quartz Sand
Depth of Bottom of Wellscreen	12.48 ft.
Depth of Bottom of Borehole	13.0 ft.

Remarks:

Well No. B291-OW

H&A OF NEW YORK CONSULTING GEOTECHNICAL ENGINEERS GEOLOGISTS AND HYDROGEOLOGISTS	GROUNDWATER LEVEL MONITORING REPORT

WELL NUMBER: B291-OW	GROUND/TOP OF CASING ELEVATION: 407.81	FILE NO. 70185-42 PAGE NO. 2 OF 2

DATE	TIME	ELAPSED TIME	DEPTH OF WATER FROM T.O.R.	ELEVATION OF WATER	REMARKS	READ BY
1/24/91	0900	2 days	2.62	405.19	PVC stickup 1.75 ft. above ground surface.	MJC

H&A OF NEW YORK
CONSULTING GEOTECHNICAL ENGINEERS
GEOLOGISTS AND HYDROGEOLOGISTS

OVERBURDEN GROUNDWATER MONITORING WELL REPORT

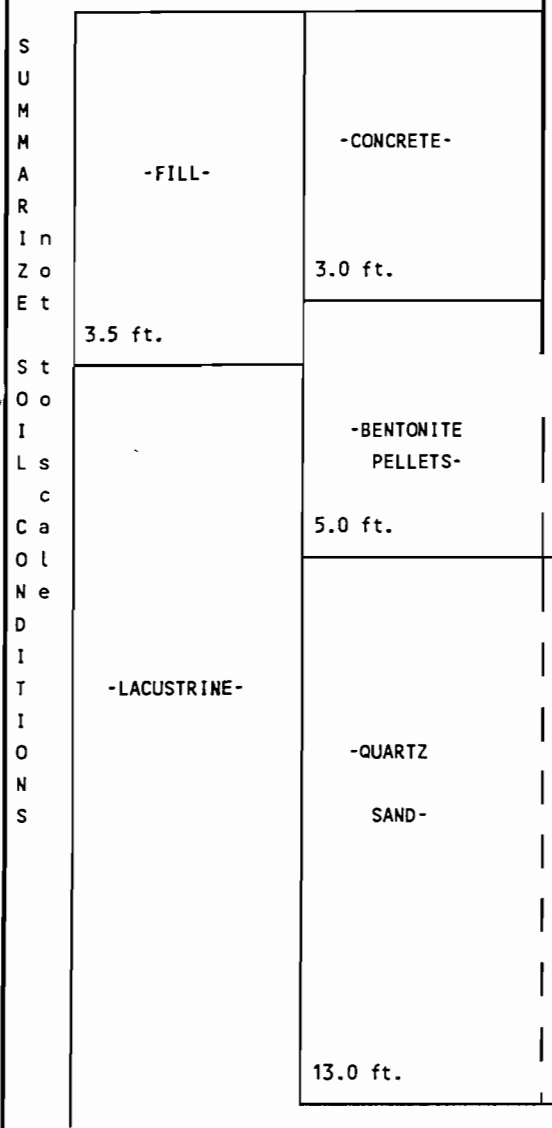
PROJECT:	ROTH BROS. SMELTING CORP. - PHASE II
LOCATION:	EAST SYRACUSE, NEW YORK
CLIENT:	NIXON, HARGRAVE, DEVANS AND DOYLE
CONTRACTOR:	PARRATT-WOLF, INC.
DRILLER:	B. WATERS RIG TYPE: MOBILE B-56, TRUCK-MOUNTED
INSTALLATION DATE:	22 JANUARY 1991

FILE NO.:	70185-42
WELL NO.:	B292-OW
LOCATION:	SEE PLAN
SHEET:	1 OF 2
H&A REP:	M. CORRIGAN

Survey Datum NGVD

Ground Elevation: 409.50

SUMMARIZED SOIL CONDITIONS



Stickup above ground surface of protective casing.	2.30 ft.
Stickup above ground surface of riser pipe.	2.11 ft.
Thickness of Surface Seal	5.0 ft.
Type of Surface Seal [indicated all seals showing depth, thickness and type]	Concrete/Bentonite
Type of Protective Casing	Steel Protective
Inside Diameter of Protective Casing	4.0 in.
Depth of Bottom of Protective Casing	1.7 ft.
Inside Diameter of Riser Pipe	2.0 in.
Type of Backfill Around Riser	Quartz Sand
Diameter of Borehole	4.0 in.
Type of coupling (threaded, welded, etc.)	Threaded
Depth of Bottom of Riser	7.16 ft.
Type of Wellscreen	PVC
Screen Slot Size	0.01 in.
Diameter of Wellscreen	2.0 in.
Type of Backfill Around Wellscreen	Quartz Sand
Depth of Bottom of Wellscreen	12.16 ft.
Depth of Bottom of Borehole	13.0 ft.

Remarks:

Well No. B292-OW

H&A OF NEW YORK
CONSULTING GEOTECHNICAL ENGINEERS
GEOLOGISTS AND HYDROGEOLOGISTS

GROUNDWATER LEVEL MONITORING REPORT

WELL NUMBER: B292-OW

TOP OF CASING ELEVATION: 411.61

FILE NO. 70185-42
PAGE NO. 2 OF 2

DATE	TIME	ELAPSED TIME	DEPTH OF WATER FROM T.O.R.	ELEVATION OF WATER	REMARKS	READ BY
1/21/91	1145	---	9.98 ft.	401.63	Riser 2.11 ft. above ground surface	MJC
1/22/91	0910	21 hr.	5.7 ft.	405.91		MJC
1/22/91	1315	25 hr.	4.8 ft.	406.81		MJC
1/24/91	0908	3 days	5.05 ft.	405.56		MJC

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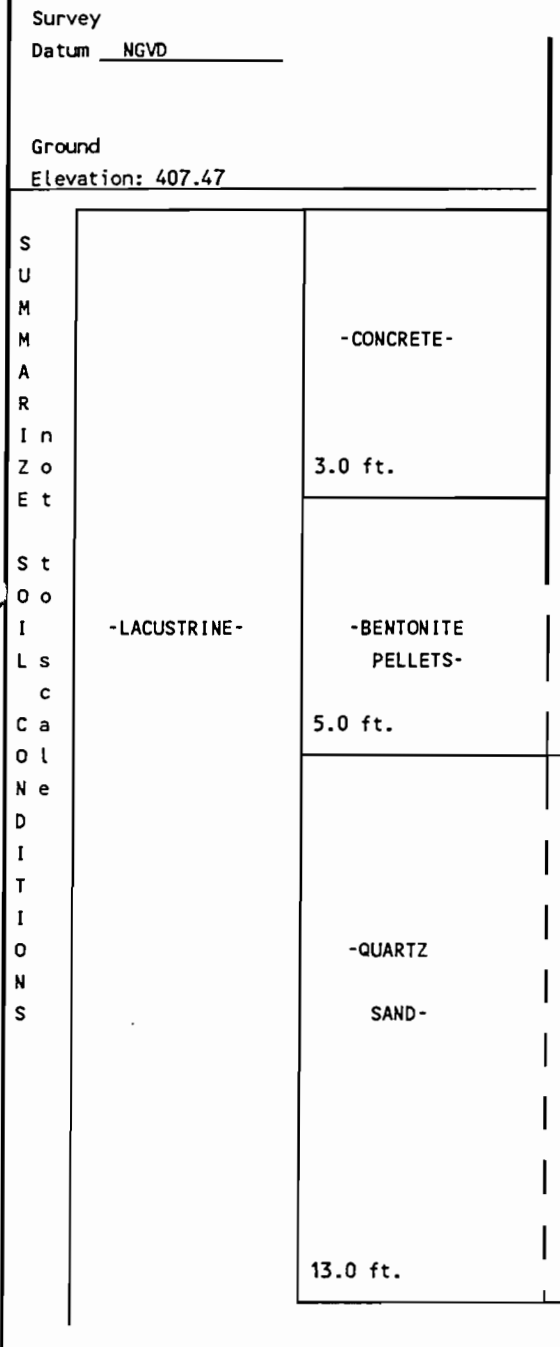
H&A OF NEW YORK
CONSULTING GEOTECHNICAL ENGINEERS
GEOLOGISTS AND HYDROGEOLOGISTS

OVERBURDEN GROUNDWATER MONITORING WELL REPORT

PROJECT:	ROTH BROS. SMELTING CORP. - PHASE II	FILE NO.:	70185-42
LOCATION:	EAST SYRACUSE, NEW YORK	WELL NO.:	B293-OW
CLIENT:	NIXON, HARGRAVE, DEVANS AND DOYLE	LOCATION:	SEE PLAN
CONTRACTOR:	PARRATT-WOLF, INC.		
DRILLER:	B. WATERS RIG TYPE: ATV, TRACK-MOUNTED	SHEET:	1 OF 2
INSTALLATION DATE:	22 JANUARY 1991	H&A REP:	M. CORRIGAN



Stickup above ground surface of protective casing.	1.82 ft.
Stickup above ground surface of riser pipe.	1.63 ft.
Thickness of Surface Seal	5.0 ft.
Type of Surface Seal [indicated all seals showing depth, thickness and type]	Concrete/Bentonite
Type of Protective Casing	Steel Protective
Inside Diameter of Protective Casing	4.0 in.
Depth of Bottom of Protective Casing	2.18 in.
Inside Diameter of Riser Pipe	2.0 in.
Type of Backfill Around Riser	Quartz Sand
Diameter of Borehole	4.0 in.
Type of coupling (threaded, welded, etc.)	Threaded
Depth of Bottom of Riser	7.26 ft.
Type of Wellscreen	PVC
Screen Slot Size	0.01 in.
Diameter of Wellscreen	2.0 in.
Type of Backfill Around Wellscreen	Quartz Sand
Depth of Bottom of Wellscreen	12.26 ft.
Depth of Bottom of Borehole	13.0 ft.

Remarks:

Well No. B293-OW

H&A OF NEW YORK CONSULTING GEOTECHNICAL ENGINEERS GEOLOGISTS AND HYDROGEOLOGISTS	GROUNDWATER LEVEL MONITORING REPORT

WELL NUMBER: B293-OW	TOP OF CASING ELEVATION: 409.10	FILE NO. 70185-42 PAGE NO. 2 OF 2

DATE	TIME	ELAPSED TIME	DEPTH OF WATER FROM T.O.R.	ELEVATION OF WATER	REMARKS	READ BY
1/24/91	0915	2 days	5.10 ft.	404.00	PVC stickup 1.63 ft. above ground surface	MJC

APPENDIX D

Laboratory Analytical Results